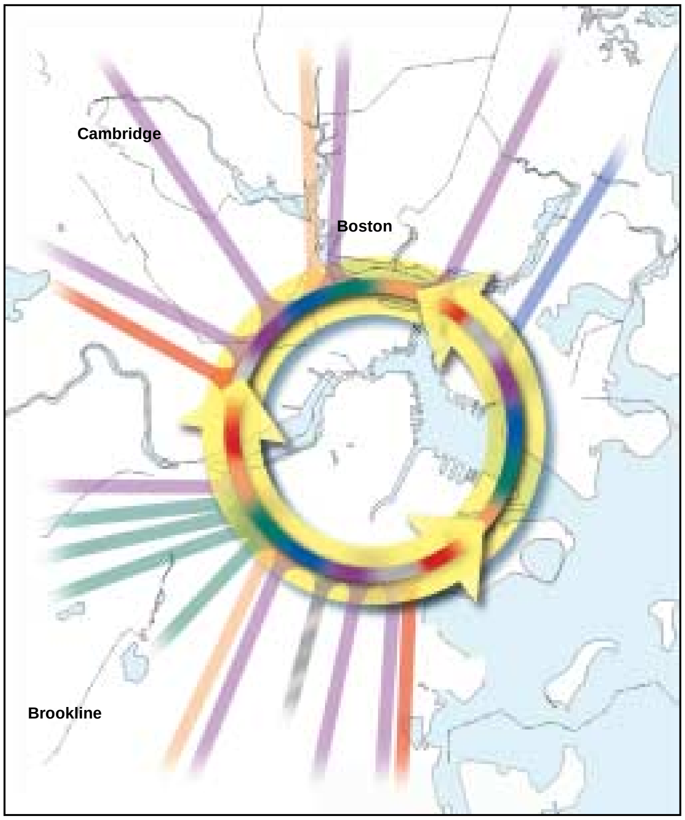

Circumferential Transportation Improvements in the Urban Ring Corridor

EXPANDED ENVIRONMENTAL NOTIFICATION FORM (ENF)

July 2001

Massachusetts Bay
Transportation Authority

Commonwealth of Massachusetts
Executive Office of Environmental Affairs ■ MEPA Office

ENF Environmental Notification Form

For Office Use Only
Executive Office of Environmental Affairs

EOEA No.:
MEPA Analyst:
Phone: 617-626-

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: **Circumferential Transportation Improvements in the Urban Ring Corridor**		
Street: **(See Attachment 1 for overall location)**		
Municipality: **Boston, Chelsea, Everett, Medford, Somerville, Cambridge, Brookline.**	Watershed: **Charles, Boston Harbor – Mystic, North Coastal**	
Universal Tranverse Mercator Coordinates: **(See Attachment 1 for overall location)**	Latitude: Longitude: **(See Attachment 1 for overall location)**	
Estimated commencement date: **2003**	Estimated completion date: **2015**	
Approximate cost: **$ 3 billion**	Status of project design: **25** %complete	
Proponent: **Massachusetts Bay Transportation Authority (Attn: Andrew D. Brennan)**		
Street: **Ten Park Plaza, Room 5750**		
Municipality: **Boston**	State: **MA**	Zip Code: **02116**
Name of Contact Person From Whom Copies of this ENF May Be Obtained: **Fran Dowling**		
Firm/Agency: **Earth Tech, Inc.**	Street: **300 Baker Avenue, 3rd Floor**	
Municipality: **Concord**	State: **MA**	Zip Code **01742**
Phone: **(978) 371-4221**	Fax: **(978) 371-7889**	E-mail: **fdowling@earthtech.com**

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☒ Yes (Phase 2 and 3 only) ☐ No

Has this project been filed with MEPA before?
☐ Yes (EOEA No.__________) ☒ No

Has any project on this site been filed with MEPA before?
☐ Yes (EOEA No.__________) ☒ No

Is this an Expanded ENF (See 301 CMR 11.05(7)) requesting:

A Single EIR? (See 301 CMR 11.06(8))	☐ Yes	☒ No
A Special Review Procedure? (See 301CMR 11.09)	☒ Yes	☐ No
A Waiver of mandatory EIR? (See 301 CMR 11.11)	☐ Yes	☒ No
A Phase I Waiver? (See 301 CMR 11.11)	☐ Yes	☒ No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): Phase 1 requires no land transfer, and no major capital investment. For Phases 2 and 3, land transfers and Commonwealth financial assistance will be necessary to construct Bus Rapid Transit (BRT) Facilities (Phase 2): and Light Rail Transit or Heavy Rail facilities (Phase 3). Facilities in Phase 2 are busways, stations and maintenance/storage. Facilities in Phase 3 are rail track and tunnel structures, stations, and maintenance/storage. Post-Phase 1 land transfer and financial assistance are proposed to be further defined in future MEPA filings.

Are you requesting coordinated review with any other federal, state, regional, or local agency?
☒ Yes (Specify Coordinated review anticipated for MEPA EIR/NEPA EIS for Phases 2 and 3 (but not for Phase 1). ☐ No

List Local or Federal Permits and Approvals: Please refer to Attachment 5.1 for a list of local and federal permits required.

Which ENF or EIR review threshold(s) does the project meet or exceed (See 301 CMR 11.03):
Phase 1 (P1) does not meet or exceed any ENF or EIR thresholds. The following applies to Phase 2 and 3 (P2 and P3).

- ☒ Land
- ☐ Water
- ☐ Energy
- ☐ ACEC
- ☐ Rare Species
- ☐ Wastewater
- ☐ Air
- ☐ Regulations
- ☒ Wetlands, Waterways, & Tidelands
- ☒ Transportation
- ☐ Solid & Hazardous Waste
- ☐ Historical & Archaeological Resources

Summary of Project Size & Environmental Impacts	**Existing**	**Change**	**Total**	**State Permits & Approvals**
LAND				☒ Order of Conditions ☐ Superceding Order of Conditions ☒ Chapter 91 License ☒ 401 Water Quality Certification ☒ MHD or MDC Access Permit ☐ Water Management Act Permit ☐ New Source Approval ☒ DEP or MWRA Sewer Connection/ Extension Permit ☐ Other Permits (*including Legislative Approvals*) – Specify:
Total site acreage *	**P1: 0** **P2: 91** **P3:** **A1: 22** **A2: 25** **B: 24** **Total: 116**			
New acres of land altered **		**P1: 0** **P2: 0** **P3: 0**		
Acres of impervious area	**44**	**P1: 0** **P2: 30** **P3: 0**	**74**	
Square feet of new bordering vegetated wetlands alteration		**P1: 0** **P2: 9,000** **P3: 0**		
Square feet of new other wetland alteration		**P1: 0** **P2: 12,000** **P3: 0** **(Riverfront area)**		
Acres of new non-water dependent use of tidelands or waterways ***		**To be determined**		
STRUCTURES				
Gross square footage ***	**P1: TBD** **P2: TBD** **P3: TBD**	**P1: TBD** **P2: TBD** **P3: TBD**	**P1: TBD** **P2: TBD** **P3: TBD**	

Number of housing units	**NA**	**NA**	**NA**
Maximum height (in feet) ***	**0**	**TBD**	**TBD**
TRANSPORTATION			
Vehicle trips per day ***	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**
Parking spaces ***	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**
WATER/WASTEWATER			
Gallons/day (GPD) of water use ***	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**
GPD water withdrawal	**NA**	**NA**	**NA**
GPD wastewater generation/ treatment ***	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**	**P1: 0** **P2: TBD** **P3: TBD**
Length of water/sewer mains (in miles)	**NA**	**NA**	**NA**

* The total of 116 acres assumes the highest possible combination of the phases.

** It is assumed that all related work will be conducted with areas that are previously altered.

*** "TBD" indicates that impacts will be determined at a later date when design plans are further advanced. When complete, new ENF's will be prepared and submitted for Phases II and III. Phase 1 involves no new construction but may involve the modification or expansion of existing bus maintenance facilities.

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☒ Yes (Specify Charles River Basin – Phase 2 activities; other areas TBD ☐ No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐ Yes (Specify___________________________________) ☒ No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☐ Yes (Specify__________________________________) ☒ No

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒ Yes (Specify Phase 1 – no impacts. Phases 2 and 3 - several locations, refer to Attachment 5.1 for sites.)
☐ No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐ Yes (Specify___________________________________) ☒ No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?

☐ Yes (Specify__________________________________) ☒ No

PROJECT DESCRIPTION: The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary*.)

The Urban Ring project is an initiative of the Massachusetts Bay Transportation Authority to improve the regional transportation system in Greater Boston. This area currently experiences congestion both on roadways and on the public transit systems at peak hours, and circumferential travel between the “spokes” of the MBTA’s radial transit system is circuitous and time consuming. The project is planned to connect the existing radial transit lines with a multimodal circumferential transit system to facilitate radial travel and help to relieve existing congestion, and to help reduce trip times and frustration for travelers. The Urban Ring routes extend within a 15-mile corridor from Logan Airport in East Boston westward through Chelsea and Everett; southward through Somerville, Cambridge, and Brookline; eastward toward UMass Boston; and northward to Logan Airport (refer to Attachment 1).

The planning process for the proposed project began by examining a wide range of potential routes and technologies, and has involved extensive public input through an ongoing program of public meetings and workshops. From 15 initial alternatives, three were selected through the public process for their ability to meet project goals and incorporate the most desirable features. These three alternatives A1, A2, and B were further modified and carried for evaluation as presented in this document. All three consist of Transportation System Management (TSM) measures, Bus Rapid Transit (BRT) service, and Supporting Elements such as improvements to Commuter Rail stations at Urban Ring interfaces. They differ only in the type of proposed rail service: Alternatives A1 and B include Light Rail Transit while Alternative A2 utilizes Heavy Rail Transit. In recognition of the cost and long lead-time requirements associated with the rail component, each of the alternatives would be developed in three separable phases, with each phase building upon the previous while continually expanding the level of service in the Corridor.

- Phase 1 (2001 - 2005): TSM
- Phase 2 (2006 - 2010): TSM + BRT and Supporting Elements
- Phase 3 (2010 - 2015): TSM + BRT and Supporting Elements + Rail Transit

The phased approach enables tangible service improvements to occur sooner and enables the level of investment and service to increase with demand and available levels of funding. Phase 1 and Phase 2 can be implemented independent of the choice of rail alignment, profile, and technology for Phase 3, and Phase 1 does not require further MEPA review and is separable from, and could proceed independently from, both Phases 2 and 3. Phase 3 provides a choice between an all-tunnel rail system crossing the Charles River in a tunnel at Kenmore

Square that could accommodate either Light Rail (Alternative A1) or Heavy Rail (Alternative A2) technology, or a partially at-grade Light Rail system north of the Charles River with a tunnel crossing near BU/Park Drive (Alternative B).

In Phase 1, Transportation System Management (TSM, or Bus Optimization) elements not requiring major new construction are proposed. Phase 1 actions are below ENF and EIR thresholds and consist of:

- Modifications to existing bus routes;
- Purchase of low-emission, low-floor 40 ft. buses;
- Additional express bus routes;
- Additional and extended crosstown bus routes;
- Modifications to existing bus maintenance facilities; and
- Completion of environmental filings, including MEPA documentation, for Phase 2.

In Phase 2, Bus Rapid Transit (BRT) routes and supporting elements are proposed for construction and implementation. A fleet of low emission, low-floor, 60 ft. articulated BRT vehicles would be purchased and additional BRT vehicle maintenance facility capacity provided. The Phase 2 BRT routes and vehicle maintenance facilities are planned for implementation in coordination with the MBTA Silver Line service and facilities that will be operational at that time. The TSM bus routes from Phase 1 would continue where not redundant to the BRT service. The BRT routes would operate at frequencies comparable to existing transit lines with station stops as shown on the diagrams in Attachment 2. During Phase 2 the environmental filings would be made to select the subsequent rail system to be added in Phase 3.

In Phase 3, a rail service between Assembly Square in Somerville and Dudley Square in the Roxbury neighborhood of Boston is proposed for construction and implementation. A fleet of electric powered rail transit vehicles would be purchased and additional rail transit vehicle maintenance facility capacity provided for the Light Rail Alternatives A1 and B. Existing maintenance capacity would be available for the Heavy Rail Alternative A2. The TSM, BRT, and supporting elements of Phase 1 and 2 would continue where not redundant to the Phase 3 rail service. The route and technology alternatives for Phase 3 rail service are summarized below.

Alternative	**Description**
A1 and A2	Cross the Charles River at Kenmore Square, follow the shortest route, and require the fewest stations to connect with the MBTA's radial lines. The gentler curves of the all-tunnel alignment allow the choice of either LRT (Alternative A1) or Heavy Rail (Alternative A2) vehicles.
B	Crosses the Charles River near the B.U. Bridge and Park Drive and follows a longer route requiring more stations to connect with the MBTA's radial lines. In order to offset the costs of the longer route and additional stations, use of surface alignments is maximized in Somerville and Cambridge. Use of Light Rail is required in order to handle tight turns and operate within and across street traffic.

This Expanded ENF requests that a Special Review Procedure be established (301 CMR 11.09) for the Project. The extent of the project planning and coordination performed to date, as documented by this filing, supports these requests. The proposed Phase 1 action does not require further MEPA review since it is below ENF and EIR thresholds and can be implemented independently from Phases 2 and 3. The requested Special Review Procedure would allow MEPA review of the Project to proceed in phases, and would accommodate the anticipated lapses in time between Project phases (Phase 1 service is proposed to be implemented between 2001-2005, Phase 2 service between 2006-2010, and Phase 3 service between 2011-2015). The Special Review Procedure also allows for joint federal and state environmental review. Therefore, this Expanded ENF requests that a combined DEIR/DEIS scoping session be held for the environmental review of Phase 2 which will be conducted concurrent with implementation of Phase 1. The environmental review of Phase 3 will occur concurrent with the design of Phase 2.

LAND SECTION – all proponents must fill out this section

I. Thresholds/Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
☒Yes ☐No; if yes, specify each threshold:

11.03(1)(a)1 – Direct alteration of 50 or more acres of land

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	*Change**	*Total*
Footprint of buildings	0	2	2
Roadways, parking, and other paved areas	44	c. 50	c. 94
Other altered areas (describe)**	30	0	30
Undeveloped areas	0	0	0

* All changes associated with Phases 2 and 3. Phase 1 may involve some modification of existing bus maintenance facilities.

** Existing railroad alignments, altered land adjacent to paved roadways.

B. Has any part of the project site been in active agricultural use in the last three years?
☐Yes ☒ No; if yes, how many acres of land in agricultural use (with agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?
☐ Yes ☒ No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a DEM-approved forest management plan:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ☒ Yes ☐ No; if yes, describe:

Phase 2 activities will occur within the MDC Charles River Basin reservation in the vicinity of the Grand Junction rail bridge abutments on the Cambridge and Boston sides of the Charles River; other Phase 2 and Phase 3 impacts in other areas of the Corridor are TBD.

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ☐ Yes ☒ No; if yes, does the project involve the release or modification of such restriction? ☐ Yes ☐ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ☐ Yes ☒ No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ☐ No ☒; if yes, describe: Urban Ring planning has been conducted in close coordination with the six Compact jurisdictions throughout the process. However, the Urban Ring communities should periodically reexamine their individual plans and make modifications as needed.

H. Describe the project's stormwater impacts and, if applicable, measures that the project will take to comply with the standards found in DEP's Stormwater Management Policy:

Phase I of the Urban Ring project will not increase impervious surfaces or otherwise have material affects on stormwater management. Phases 2 and 3 may result in increased impervious surfaces for new bus rapid transit (BRT) busways and maintenance/storage buildings. Stormwater management plans will be developed for these future phases to meet or exceed the standards of DEP's Stormwater Management Policy, and to achieve runoff rates comparable to existing conditions as required. Stormwater management components will include such measures as catch basins with deep sumps and oil/water separators, and a commitment to maintain the stormwater management system through periodic road surface sweeping and catch basin maintenance and cleaning.

I. Is the project site currently being regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes ☒ No ☐; if yes, what is the Release Tracking Number (RTN)?

Phase 1 of the Urban Ring Project will not involve land alterations that could affect sites regulated under M.G.L. c.21E. Phase 2 will involve land alterations to construct BRT busways and to build and/or expand BRT maintenance/storage facilities. Phase 3 will involve land alterations to construct Light Rail Transit track, structures, and tunnels, and maintenance/storage buildings. Phase 2 and Phase 3 land alterations may potentially affect sites regulated under M.G.L. c.21E. A corridor-wide review of M.G.L. c.21E sites conducted during the screening of project alternatives in 1998 found that approximately 300 M.G.L. c.21E sites existed within the one-mile-wide review corridor. Since the list of M.G.L. c.21E sites is continually updated due to new site detection and remediation of existing sites, new reviews of M.G.L. c.21E sites will need to be conducted prior to the implementation of Phases 2 and 3.

J. If the project site is within the Chicopee or Nashua watershed, is it within the Quabbin, Ware, or Wachusett subwatershed? ☐ Yes ☒ No; if yes, is the project site subject to regulation under the Watershed Protection Act? ☐Yes ☐ No

K. Describe the project's other impacts on land:

Phase 1 of the Urban Ring Project will involve no material impacts to land resources, since it involves only new, expanded, or otherwise modified bus routes on existing roadways using low emission buses. Phase 2 involves construction of dedicated BRT busways on abandoned or adjacent to active railroad rights-of-way and on or adjacent to existing roads. One of the proposed BRT busways would utilize the existing MBTA owned land on the east side of Ruggles Street adjacent to Northeastern University and near athletic facilities of Wentworth Institute. Another busway would utilize a zone along Melnea Cass Boulevard owned by the Boston Redevelopment Authority that, under an agreement between the BRA and the State, cannot be developed without consent of the State transportation agencies. Phase 3 would involve construction of either light rail transit or heavy rail within existing railroad rights-of-way and tunnels. The entire project would be constructed on or beneath urbanized areas.

III. Consistency

A. Identify the current municipal comprehensive land use plan and the open space plan and describe the consistency of the project and its impacts with that plan(s):

The Urban Ring Regional Planning Compact communities have enacted land use policies, including zoning and redevelopment plans, intended to concentrate development within the Urban Ring. These communities have documented their respective plans and policies in the Urban Ring Compact Report , July 2001.

The municipalities have enacted zoning, land use plans, and other policies that promote increased density. In established employment centers (referred to as “Activity Centers” in Urban Ring planning documents), further growth is encouraged while limiting congestion. In emerging employment areas, new economic development is encouraged on underutilized properties. The Compact communities also wish to promote residential growth in the corridor, and to revitalize the neighborhood business centers that serve these residential communities.

The purpose of the Urban Ring project is to provide additional transit options to serve these identified Activity Centers through the development of a circumferential transportation system that connects the radial facilities, provides access to these centers, while relieving congestion on the core portions of the existing radial transit network. The proposed Urban Ring project is consistent with, and highly supportive of, the plans and policies of the municipalities in the Urban Ring Corridor. The projected impacts of the Urban Ring are highly beneficial in the categories of transportation access and mobility, the environment, and land use and economic development and all are consistent with the municipal plans and policies.

B. Identify the current Regional Policy Plan of the applicable Regional Planning Agency and describe the consistency of the project and its impacts with that plan:

MetroPlan, prepared by the Metropolitan Area Planning Council (MAPC), serves as the regional development plan for the Boston metropolitan area. The plan has since its adoption in 1990, provided a regional strategy to contain sprawl through encouragement of sustainable development patterns. MetroPlan is currently being updated. The Urban Ring project is consistent with MetroPlan as it will promote mixed development in urban areas, which feature greater densities and existing public infrastructure. By doing so, the region can expand and strengthen its economy while limiting energy use, traffic congestion and environmental degradation and safeguarding air, water, and land resources.

In a display of cross-jurisdictional support for this project, the chief executives from the six municipalities signed a precedent setting Circumferential Ring Regional Planning Compact in October of 1995. In the Compact, the cities adopted a set of planning principles, committed to working with the MBTA during the Urban Ring MIS and agreed to coordinate transportation and land use policies within the Corridor. Each of the Compact jurisdictions is pursuing plans and policies that encourage Transit Oriented Development (TOD).

C. Will the project require any approvals under the local zoning by-law or ordinance (i.e. text or map amendment, special permit, or variance)? Yes ☐ No ☒; if yes, describe: As a state agency, the MBTA is not subject to local zoning ordinances.

D. Will the project require local site plan or project impact review?
☐ Yes ☒ No; if yes, describe:

RARE SPECIES SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ☐ Yes ☒ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **rare species or habitat**? ☐ Yes ☒ No

C. If you answered "No" to *both* questions A and B, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits (N/A)

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ☐ Yes ☐ No. If yes,

1. Which rare species are known to occur within the Priority or Estimated Habitat (contact: Environmental Review, Natural Heritage and Endangered Species Program, Route 135, Westborough, Massachusetts, 01581, allowing 30 days for receipt of information):
2. Have you surveyed the site for rare species? ☐ Yes ☐ No; if yes, please include the results of your survey.
3. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ☐ Yes ☐ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ☐ Yes ☐ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ☐ Yes ☐ No; if yes, describe:

C. Will the project alter "significant habitat" as designated by the Massachusetts Division of Fisheries and Wildlife in accordance with M.G.L. c.131A (see also 321 CMR 10.30)? ☐Yes ☐ No; if yes, describe:

D. Describe the project's other impacts on rare species including indirect impacts (for example, stormwater runoff into a wetland known to contain rare species or lighting impacts on rare moth habitat):

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? ☒ Yes ☐ No; if yes, specify, in quantitative terms:

In Phase 2 it is estimated that approximately 9,000 square feet of Bordering Vegetated Wetland may be impacted by the construction of a Bus Transitway road in Chelsea, approximately 500 feet west of Chelsea Creek, within an area of *Phragmites australis* adjacent to an existing railroad.

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? ☒ Yes ☐ No; if yes, specify which permit:

Phase 1 will not require state permits or local Orders of Conditions related to wetlands, waterways, or tidelands, since it will not result in impacts to these resources. Phase 2 may require an Order of Conditions under the Massachusetts Wetlands protection Act from the Chelsea Conservation Commission for direct impacts to Bordering Vegetated Wetlands. If these impacts exceed 5,000 square feet, a variance from the Wetlands Protection Act issued by the Massachusetts Department of Environmental Protection may be required. Orders of Conditions may be required for Phase 2 and Phase 3 work within banks, riverfront areas, and/or buffer zones adjacent to wetland resources from the Conservation Commissions of each Urban Ring community.

Phases 2 and 3 may also require licenses or permits under M.G.L. Chapter 91 for work within filled tidelands in the vicinity of Chelsea Creek, the Mystic River, and the Charles River.

C. If you answered "No" to *both* questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Describe any wetland resource areas currently existing on the project site and indicate them on the site plan:

The majority of the wetland resource areas within the project corridor consist of the Chelsea River, Malden River, Mystic River, Charles River, and Muddy River. An area of vegetated wetland exists within the project route, approximately 500 feet east of the Chelsea River near the junction of the proposed BRT (Phase 2) and the Newburyport Commuter Rail line. In Cambridge, a small pond is located along the railroad adjacent to Vassar Street.

B. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	**Area (in square feet) or Length (in linear feet)**
Land Under the Ocean	0
Designated Port Areas	0
Coastal Beaches	0

Coastal Dunes	0
Barrier Beaches	0
Coastal Banks	0
Rocky Intertidal Shores	0
Salt Marshes	0
Land Under Salt Ponds	0
Land Containing Shellfish	0
Fish Runs	0
Land Subject to Coastal Storm Flowage	0

Inland Wetlands

Bank	200 linear feet*
Bordering Vegetated Wetlands	9,000 square feet*
Land under Water	0
Isolated Land Subject to Flooding	0
Bordering Land Subject to Flooding	0
Riverfront Area	12,000 square feet*

* All wetland impacts estimates are approximate, and are associated with Phases 2 and 3. Bank impacts may occur at the BRT approach to Chelsea Creek and for work associated with the at-grade rail crossing of the Mystic River at Wellington Bridge for Phase 3, under Alternative A2. Bordering Vegetated Wetland impacts are likely for widening of the existing rail bed for the BRT in Chelsea approximately 500 feet west of Chelsea Creek. Riverfront Area work includes the BRT approaches to the Charles River, and the rail bridge crossing of the Mystic River at Wellington Bridge.

C. Is any part of the project

1. A limited project? ☐ Yes ☒ No
2. The construction or alteration of a dam? ☐ Yes ☒ No; if yes, describe:
3. Fill or structure in a velocity zone or regulatory floodway? ☐ Yes ☒ No
4. Dredging or disposal of dredged material? ☒ Yes ☐ No; if yes, describe the volume of dredged material and the proposed disposal site:
5. A discharge to Outstanding Resource Waters? ☐ Yes ☒ No
6. Subject to a wetlands restriction order? ☐ Yes ☒ No; if yes, identify the area (in sq. feet):

In Phase 2, minimal amounts of dredging associated with modifications to the Grand Junction Railroad bridge over the Charles River are anticipated.

D. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? ☒ Yes ☐ No; if yes, has a Notice of Intent been filed or a local Order of Conditions issued? ☐ Yes ☒ No; if yes, list the date and DEP file number:______________.
Was the Order of Conditions appealed? NA ☐ Yes ☐ No.
Will the project require a variance from the Wetlands regulations? ☒ Yes ☐ No.

E. Will the project:

1. Be subject to a local wetlands ordinance or bylaw? ☐ Yes ☒ No
2. Alter any federally protected wetlands not regulated under state or local law?
☐ Yes ☒ No; if yes, what is the area (in square feet)?

F. Describe the project's other impacts on wetlands (including new shading of wetland areas or removal of tree canopy from forested wetlands):

In Phase 2 and 3 the Urban Ring project will involve work within the 100-foot buffer zone to Bank and Land Under Water (LUW) adjacent to Chelsea Creek, the Malden River, the Mystic River, the Charles River and the Muddy River (approximately 30,000 square feet of Buffer Zone work is estimated). Direct impacts to LUW in the Charles River will result from Phase 2 activities at the Grand Junction Railroad Bridge. Impacts to the 25-foot Riverfront Areas associated with the above named rivers are also anticipated. All wetland impacts will occur within Phases 2 and 3 and will be documented in the EIR.

III. Waterways and Tidelands Impacts and Permits

A. Is any part of the project site waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ☒ Yes ☐ No; if yes, is there a current Chapter 91 license or permit affecting the project site? ☒ Yes ☐ No; if yes, list the date and number:

Phase 1 of the Urban Ring project will not involve activities subject to M.G.L. c. 91. Research into existing M.G.L. c. 91 licenses and authorizations in the Urban Ring corridor will be performed for Phases 2 and 3, which will involve work within jurisdictional tideland areas. This research will be documented in the EIR.

B. Does the project require a new or modified license under M.G.L.c.91? ☒ Yes ☐ No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water dependent use?
Current ___ Change ___ Total ___

The Urban Ring project will likely require new or modified licenses under M.G.L. c. 91 for work within filled jurisdictional tidelands in the vicinity of Chelsea Creek, the Mystic River, and possibly the Charles River. Phase 1 will not involve activities requiring a new or modified M.G.L. c. 91 license. The extent of Phase 2 and Phase 3 work within jurisdictional tidelands will be determined, and documented in the EIR.

C. Is any part of the project

1. A roadway, bridge, or utility line to or on a barrier beach? ☐ Yes ☒ No; if yes, describe:
2. Dredging or disposal of dredged material? ☒ Yes ☐ No; if yes, volume of dredged material _TBD__

   Minor dredging activities will occur in Phase 2 for the modifications to the Grand Junction Railroad bridge over the Charles River.
3. A solid fill, pile-supported, or bottom-anchored structure in flowed tidelands or other waterways? ☐ Yes ☒ No; if yes, what is the base area? _______
4. Within a Designated Port Area? ☒ Yes ☐ No

   The Urban Ring Corridor traverses portions of the South Boston, East Boston and Chelsea Creek DPAs.

C. Describe the project's other impacts on waterways and tidelands:

No other impacts on waterways or tidelands are anticipated.

IV. Consistency:

A. Is the project located within the Coastal Zone? ☒ Yes ☐ No; if yes, describe the project's consistency with policies of the Office of Coastal Zone Management:

The Urban Ring project will be consistent with all relevant program policies and management principles of the Massachusetts Coastal Zone Management (CZM) Program Plan, enacted under the authorization of the federal Coastal Zone Management Act. In particular, the Urban Ring project is consistent with policy espoused by CZM Growth Management Principle #2 – ensuring that state and federally funded transportation projects primarily serve existing developed areas, and assigning highest priority to projects that meet the needs of urban and community development centers.

Phase 1 will involve no activities subject to Coastal Zone Management Consistency review. Phases 2 and 3 will include work within the Coastal Zone in Chelsea, Everett and Somerville, as well as portions of the East Boston, Charlestown, South Boston and North Dorchester neighborhoods of Boston. Activities within the banks of the Charles River in Boston and Cambridge are also subject to CZM Consistency Review.

A preliminary assessment of Coastal Zone Management Consistency issues is included in Attachment 5.

B. Is the project located within an area subject to a Municipal Harbor Plan? ☒ Yes ☐ No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

At this time, the only Municipal Harbor Plan within the Urban Ring corridor is the Boston Harbor Plan, encompassing portions of the South Boston waterfront. The Urban Ring is fully consistent with the provisions of the Boston Harbor Plan and provides the necessary public infrastructure to support the continued operation of the port and the redevelopment envisioned in the harbor plan. The South Boston plan is complete. The East Boston Municipal Harbor Plan is being drafted and is not likely to be adopted until late 2001-early 2002.

WATER SUPPLY SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ☐ Yes ☒ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ☐ Yes ☒ No; if yes, specify which permit:

C. If you answered "No" to *both* questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits (N/A)

A. Describe, in gallons/day, the volume and source of water use for existing and proposed activities at the project site:

	Existing	*Change*	*Total*
Withdrawal from groundwater	________	________	________
Withdrawal from surface water	________	________	________
Interbasin transfer	________	________	________
Municipal or regional water supply	________	________	________

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ☐ Yes ☐ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source,

1. Have you submitted a permit application? ☐ Yes ☐ No; if yes, attach the application
2. Have you conducted a pump test? ☐ Yes ☐ No; if yes, attach the pump test report

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons/day)? ______ Will the project require an increase in that withdrawal? ☐ Yes ☐ No

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility?

☐ Yes ☐ No. If yes, describe existing and proposed water supply facilities at the project site:

	Existing	*Change*	*Total*
Water supply well(s) (capacity, in gpd)	________	________	________
Drinking water treatment plant (capacity, in gpd)	________	________	________
Water mains (length, in miles)	________	________	

F. If the project involves any interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve

1. New water service by a state agency to a municipality or water district? ☐ Yes ☐ No
2. A Watershed Protection Act variance? ☐ Yes ☐ No; if yes, how many acres of alteration?
3. A non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ☐ Yes ☐ No

H. Describe the project's other impacts (including indirect impacts) on water resources, quality, facilities and services:

III. Consistency – Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ☐ Yes ☒ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ☒ Yes ☐ No; if yes, specify which permit:

It is proposed that Phase 1 activities would include modifications to existing bus maintenance and storage facilities without significant increase in water or wastewater use. The Phase 2 activities would include more significant expansion of existing MBTA bus maintenance facilities and will likely also require construction of an additional new BRT maintenance facility, including vehicle washing facilities. An MWRA Industrial User Discharge permit (and a Sewer Connection permit) will be obtained for this facility if required. Additionally, minor individual Sewer Connection permits will be required in Phase 3 for planned rail stations. Phase 3 activities in the case of Alternatives A1 and B also would include construction of a new Light Rail maintenance facility (exact location to be determined in the Phase 3 EIR). In the case of Phase 3 Alternative A2 it would include modifications to the existing Wellington Orange Line Heavy Rail maintenance facility in Medford, MA. An MWRA IUD permit, or an amendment to the existing Wellington permit (as well as new or amended Sewer Connections), is assumed to be required for Phase 3.

C. If you answered "No" to *both* questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe, in gallons/day, the volume and disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00):

	Existing	**Change**	**Total**
Discharge to groundwater (Title 5)	TBD	TBD	TBD
Discharge to groundwater (non-Title 5)	TBD	TBD	TBD
Discharge to outstanding resource water	TBD	TBD	TBD
Discharge to surface water	TBD	TBD	TBD
Municipal or regional wastewater facility	TBD	TBD	TBD
Total	**TBD**	**TBD**	**TBD**

B. Is there sufficient capacity in the existing collection system to accommodate the project? ☒ Yes ☐ No; if no, describe where capacity will be found:

C. Is there sufficient existing capacity at the proposed wastewater disposal facility? ☒ Yes ☐ No; if no, describe how capacity will be increased:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ☐ Yes ☒ No. If yes, describe as follows:

	Existing	**Change**	**Total**
Wastewater treatment plant (capacity, in gpd) (MWRA Deer Island)			
Sewer mains (length, in miles)			
Title 5 systems (capacity, in gpd)			

E. If the project involves any interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed? N/A

F. Does the project involve new sewer service by an Agency of the Commonwealth to a municipality or sewer district? ☒ Yes ☐ No

G. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, or other sewage residual materials? ☐ Yes ☒ No; if yes, what is the capacity (in tons per day):

	Existing	**Change**	**Total**
Storage			
Treatment, processing			
Combustion			
Disposal			

H. Describe the project's other impacts (including indirect impacts) on wastewater generation and treatment facilities: None

III. Consistency – Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to wastewater management:

All necessary measures will be taken to ensure that wastewater management practices comply with federal, state, regional, and local plans and policies.

A. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ☐ Yes ☐ No; if yes, indicate the EOEA number for the plan and describe the relationship of the project to the plan

TRANSPORTATION – TRAFFIC GENERATION SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ☒ Yes ☐ No; if yes, specify, in quantitative terms:

11.03(6)(a)5: The Urban Ring will result in the construction of new transit facilities (Phase 2 – BRT; Phase 3: Light Rail or Heavy Rail) along a combination of new and existing right-of-way. In each Phase the Urban Ring service results in a net reduction in the number of person-trips by automobile and the number of Vehicle Miles Traveled (VMT) when compared to the No-Build alternative.

B. Does the project require any state permits related to **state-controlled roadways**? ☒ Yes ☐ No; if yes, specify which permit:

Massachusetts Highway Department Access Permit; Metropolitan District Commission Construction Permit

C. If you answered "No" to *both* questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

Compared to the No-Build alternative, the Urban Ring project at each of its three Phases would result in a net reduction in Vehicle Miles Traveled (VMT) in the region and results in a net positive change in the transit mode share of all trips in the region. Phase 1 service would reduce VMT by 14,150 daily; Phase 2 service would reduce VMT by 52,500 daily; and Phase 3 service would reduce VMT between 355,200 and 384,200 daily depending upon the Alternative.

The number of additional buses that would be added to the roadway network in any phase is insignificant relative to the background traffic volume of the roadways over which the buses will operate. There are no park-and-ride facilities planned within any phase of the Urban Ring project. The primary mode of access to the Urban Ring service is by walking and by connections with the existing MBTA bus, transit, and commuter rail system. The addition and expansion of maintenance facilities in Phase 2 and Phase 3 would add a limited number of employee parking spaces at these facilities.

In all phases it may be necessary to add some MBTA employee parking spaces to allow first and last shift operators and station personnel to get to work and return home at times when the transit system is not in service. In Phase 2 the construction of busways, bus lanes, and stations may, in certain locations, result in removal or relocation of a limited number of existing on-street parking spaces. Similarly, in Phase 3 the construction of Light or Heavy Rail facilities, stations, and station access points may necessitate the removal or relocation of a limited number of existing on-street parking spaces. The specific number and location of impacted on-street parking spaces will be determined during the EIR process for Phase 2 and Phase 3 respectively. Refer to Attachment 5.3, paragraph S.7 for additional information on traffic and the environment in Phases 2 and 3.

	Existing	Change	Total
Number of parking spaces	TBD	TBD	TBD
Number of vehicle trips per day	TBD	TBD	TBD

ITE Land Use Code(s):

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1. NA*			
2. NA*			
3. NA*			

* The Phase 1 service will operate over existing roadways throughout the study corridor as shown on the Phase 1 diagram in Attachment 2 too numerous to list in the above table. Refer to Part IIA above for summary and Attachment 5.3, paragraph S.7 for additional details regarding the net reduction in daily traffic achieved in Phase 1. Roadway specific traffic impacts will be performed during the EIR process for Phase 2 and Phase 3 respectively.

C. Describe how the project will affect transit, pedestrian and bicycle transportation facilities and services:

The project at each phase will reduce congestion within the existing MBTA transit system, improve pedestrian access to transit stations by placing more of them within walk and bicycle distance of activity centers and neighborhoods. The bus, BRT, and rail routes are being planned to complement the existing and planned network of pedestrian and bicycle facilities within the Urban Ring corridor. Refer to Attachment 5.3, paragraph S.7 for additional information.

III. Consistency – Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

Each of the Urban Ring jurisdictions has implemented unique policies that are intended to reduce reliance on the automobile and increase transit use. These policies include planning and policy documents that state the need for improved public transit services. Zoning and other land use regulations directly encourage transit use by requiring employers to set transit share goals, or by encouraging the creation of new transit oriented developments, and by ensuring that new development projects are transit accessible. In some cases, cities are taking a more active role, operating shuttle bus services to link businesses with existing MBTA stations. Finally, the cities have placed limits on parking, as a means to encourage transit use.

Refer to the summary matrix contained in Attachment 5.2 showing plans and policies by jurisdiction with indication that Urban Ring project is consistent with all of them. In several cases, including the Urban Ring Compact Report produced by the six jurisdictions in the Corridor, the Urban Ring project is specifically endorsed by local plans and policies – not just consistent with them, and reinforces incorporation of the Compact document with the project proponent's efforts.

ROADWAYS AND OTHER TRANSPORTATION FACILITIES SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ☒ Yes ☐ No; if yes, specify, in quantitative terms:

11.03(6)(a)5: The Urban Ring will result in the construction of a new rapid transit (Phase 2 – BRT; Phase 3: Light Rail or Heavy Rail) along a new right-of-way for transportation of people.

B. Does the project require any state permits related to **roadways or other transportation facilities**? ☒ Yes ☐ No; if yes, specify which permit:

Massachusetts Highway Department Access Permit; Metropolitan District Commission Construction Permit, City of Boston. Complete list of required permits has not yet been determined. For example, one of the planned Phase 2 BRT routes is shown following the route of the South Boston Haul Road which, during the timeframe of Urban Ring Phase 2, may have its use restricted to trucks according to current Central Artery environmental permits. The I-93 HOV lanes are also under consideration as a route option for the Phase 2 BRT to reach I-90 and the South Boston Waterfront. Additionally, Phase 2 may require local approvals from local boards for the operation of new fixed routes. Specific routing and station locations of the Phase 2 BRT will be determined during the DEIR/S for Phase 2.

C. If you answered "No" to *both* questions A and B, proceed to the **Energy Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities at the project site:
Refer to Attachment 5.3. Existing facilities are described in paragraph S.4.1; proposed facilities in paragraph S.6.5; and impacts in paragraph S.7, pages S-15 through S-22.

	Existing	**Change**	**Total**
Length (in linear feet) of new or widened roadway	61,600*	44,000*	105,600*
Width (in feet) of new or widened roadway	Varies**	Varies**	Varies**

*Approximately 11.5 miles of existing roadway would be used for the BRT routes to which approximately 6.5 miles of new busway and bus lanes would be added in Phase 2 and another 2 miles added in Phase 3.
** The width of existing roadways varies. The addition of bus lanes may add approximately 24 feet to the width of some roadways and some new roadways may be created. In some locations general travel lanes could be converted to bus lanes without adding significantly to the overall width of the roadway. Exact locations to be determined during the EIR.

Other transportation facilities: Refer to Attachment 5.3 paragraph S.6.5.2 for a description of the new and improved commuter rail stations planned as supporting elements for Urban Ring Phase 2.

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? Yes - TBD
2. Cutting of living public shade trees (number)? P1: No
P2: TBD

7/26/01

	P3: TBD
3. Elimination of stone wall (in linear feet)?	No

III. Consistency – Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

The proposed project is consistent with and highly supportive of many local, regional, state and federal policies related to traffic, transit, pedestrian and bicycle. Although categorized as a “transit” project, the Urban Ring Project is in fact a “multi-modal” transportation project. This project will advance and promote various federal, state, regional and local plans and policies such as: reduction of travel times; encouraging environmental justice by serving large numbers of economically disadvantaged households; improving regional air quality through a reduction in emissions of volatile organic compounds, oxides of nitrogen and carbon monoxide; resulting in positive changes to regional travel patterns; and reducing energy consumption levels. See Attachment 5.3, paragraph S.7 for reference to additional detail on the net reductions in emissions achieved by the project in each phase.

It is highly consistent with all nine policies identified in the current Regional Transportation Plan. The Urban Ring:

1. Supports economic vitality through transportation investments;
2. Ensures and increases the safety of transportation systems;
3. Improves mobility for people by providing transportation options;
4. Reduces air pollution and minimizes water, soil, and noise pollution, and uses transportation enhancement activities to preserve and improve the natural and built environments;
5. Integrates and connects components of the transportation system, across and between modes;
6. Provides a transportation system that is accessible to all people regardless of physical limitations, economic status, or ethnicity, and ensure benefits/burdens are shared equitably;
7. Emphasizes the preservation and modernization of the existing transportation system;
8. Promotes public involvement in all phases of transportation planning and development;
9. Promotes the integration of transportation and land use policies.

It is consistent with the Massachusetts Pedestrian Plan, prepared by the Mass Highway in 1998, because it will reduce conflicts and impediments for pedestrians and will encourage new development within walking distance. The project is also consistent with the Massachusetts Statewide Bicycle Transportation Plan, prepared by Mass Highway in 1998, because it provides greater modal choice.

Furthermore, the Urban Ring promotes sustainable development practices such as urban redevelopment, “Brownfields” redevelopment, and enabling the construction of additional transit-oriented development. Additionally, this project will create new and expand existing opportunities for reverse commuting, thereby improving access to jobs. Moreover, this project represents a cost effective investment because it expands and rehabilitates an existing transportation system that serves a regional and local need, and enables the existing transportation system to operate more efficiently by providing greatly increased connectivity for users of the MBTA radial transit and commuter rail lines. The direct and efficient routing provided by the Urban Ring will attract existing transit users who currently must use radial transit lines into downtown Boston and back out again to reach Urban Ring Corridor destinations. Eliminating these "pass through" trips from the central subway will greatly reduce congestion along the most crowded portions of the existing system, thereby freeing capacity for future growth.

The convenient connections between the Urban Ring and the rest of the MBTA system will increase the accessibility of transit to populations throughout the Urban Ring Corridor and the Region as a whole, as well as increase mobility by significantly reducing average transit trip times. The increased accessibility and mobility provided by the Urban Ring will attract large numbers of riders comprised primarily of existing transit users who will find the Urban Ring provides more direct routing and shorter trip times, as well as new transit riders who will find the MBTA system with an Urban Ring to be more attractive than driving. The project will enhance opportunities for ADA compliance and presents an opportunity to reduce the need for special carrier services. The net new transit riders will increase the percentage of total trips made by transit in the corridor and in the Region as a whole, and will decrease the percentage of trips made by automobile. See Attachment 5.3, paragraph S.7 for additional details.

The Urban Ring is consistent with plans and policies of the Federal Transit Administration and Phase 2 and 3 are expected to be competitive for funding under the FTA's New Starts project evaluation criteria currently being updated by the FTA.

ENERGY SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))?
☐ Yes ☒ No; if yes, specify, in quantitative terms: Phase 1 and 2 No; Phase 3 TBD.

B. Does the project require any state permits related to **energy**? ☐ Yes ☒ No; if yes, specify which permit: Phase 1 and 2 will not require any state permits related to energy. Given the rapid changes occurring in the energy market, the need for energy permits for Phase 3, which would employ electric powered Light or Heavy Rail transit vehicles, will be determined during the DEIR/S for Phase 3.

C. If you answered "No" to *both* questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	**Change**	**Total**
Capacity of electric generating facility (megawatts)			
Length of fuel line (in miles)			
Length of transmission lines (in miles)			
Capacity of transmission lines (in kilovolts)			

B. If the project involves construction or expansion of an electric generating facility, what are

1. The facility's current and proposed fuel source(s)?
2. The facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ☐ Yes ☐ No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency – Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ☐ Yes ☒ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ☐ Yes ☒ No; if yes, specify which permit:

C. If you answered "No" to *both* questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ☐ Yes ☐ No; if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	**Change**	**Total**
Particulate matter			
Carbon monoxide			
Sulfur dioxide			
Volatile organic compounds			
Oxides of nitrogen			
Lead			
Any hazardous air pollutant			
Carbon dioxide			

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

Each operational phase of the project results in a net improvement to air quality compared to the "No Build" alternative as described in Attachment 5.3, paragraph S.7. Air quality impacts during construction of Phase 2 and Phase 3 facilities will be determined during the respective DEIR/S processes.

There are no noise impacts associated with Phase 1. The Phase 2 and Phase 3 construction and operational noise impacts will be determined during the DEIR/S for Phase 2 and Phase 3 respectively.

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds/Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ☐ Yes ☒ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ☐ Yes ☒ No; if yes, specify which permit:

C. If you answered "No" to *both* questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to *either* question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ☐ Yes ☐ No; if yes, what is the volume (in tons per day) of the capacity:

	Existing	**Change**	**Total**
Storage	________	________	________
Treatment, processing	________	________	________
Combustion	________	________	________
Disposal	________	________	________

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ☐ Yes ☐ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	**Change**	**Total**
Storage	________	________	________
Recycling	________	________	________
Treatment	________	________	________
Disposal	________	________	________

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos?
☐Yes ☐ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency – Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds/Impacts

A. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ☒ Yes ☐ No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ☐ Yes ☒ No; if yes, please describe:

B. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ☒ Yes ☐ No; if yes, does the project involve the destruction of all or any part of such archaeological site? ☐ Yes ☒ No; if yes, please describe:

C. If you answered "No" to *all parts of both* questions A and B, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to *any part of either* question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

D. Have you consulted with the Massachusetts Historical Commission? ☐ Yes ☒ No; if yes, attach correspondence

E. Describe and assess the project's other impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

A preliminary inventory of inventoried historic and archaeological resources was prepared in 1997 for the Environmental Baseline component of the Urban Ring Major Investment Study. The inventory information is included in the Expanded Environmental Notification Form as part of Attachment 5.1.

Phase 1 of the Urban Ring project involves no direct impacts to listed or inventoried historical and archaeological resources. Negligible indirect impacts will be limited to additional bus traffic on existing roadways.

Phases 2 and 3 would involve construction and operation of new BRT and Light Rail or Heavy Rail alignments in the vicinity of listed and eligible individual historic structures and archaeological resources, and within historic districts in Chelsea, Somerville, Cambridge, Brookline, and Boston. Direct impacts upon historic or archaeological resources are expected to consist of renovation of the Grand Junction Railroad Bridge, which is situated within the Charles River Basin Historic District. Fort Washington Park in Cambridgeport is located adjacent to a proposed BRT route and station in Phase 2, and the rail alignment in Phase 3 Alternative B. Indirect impacts are expected to consist of modifications to historic settings, and noise and vibration associated with construction and operation of the transit facilities. An updated inventory of historic and archaeological resources in the vicinity of the project corridor, and a detailed assessment of Phase 2 and 3 impacts to these resources, will be prepared for the EIR.

II. Consistency – Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

Some facilities in Phases 2 and 3 may be in proximity to parks such as MDC Draw 7 in Somerville, Ft. Washington Park in Cambridge, and other MDC facilities. A preliminary inventory of historic districts potentially impacted was developed and is contained in Attachment 5-1. Phase 1 has no impacts on historic or archaeological sites, and the Phase 2 and 3 historic and archaeological impacts will be evaluated in detail during the respective DEIR/S processes.

ATTACHMENTS:

1. Plan of existing conditions of the proposed project site and its immediate context, showing all known structures, roadways and parking lots, rail rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.

2. Detailed descriptions, plans, and schedule of the proposed project by phase.

3. **Original** U.S.G.S. map or good quality **color** copy indicating the project location and boundaries (refer to Attachment 1).

4. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).

5. Other: 5.1 Local and Federal Permits Required and Inventory of Historic Districts Potentially Impacted

   5.2 Plans and Policies Consistency Matrix

   5.3 MIS Final Report Executive Summary

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

(Name)	**(Date)**
Boston Globe	July 31, 2001
Boston Herald	July 31, 2001
The Banner	On or before August 8, 2001
La Semana	On or before August 8, 2001
El Mundo	On or before August 8, 2001
Chelsea Record	On or before August 8, 2001
South Boston Tribune	On or before August 8, 2001
Beacon Hill Times	On or before August 8, 2001
Somerville Journal	On or before August 8, 2001
Somerville News	On or before August 8, 2001
South End News	On or before August 8, 2001

Fenway News	On or before August 8, 2001
East Boston Sun Transcript	On or before August 8, 2001
South Boston Tribune	On or before August 8, 2001
Cambridge Chronicle	On or before August 8, 2001
Everett Independent	On or before August 8, 2001
The Metro	On or before August 8, 2001
Roxbury Community News	On or before August 8, 2001
The Back Bay Courant	On or before August 8, 2001
Malden City Press	On or before August 8, 2001
Medford Daily Mercury	July 31, 2001
Brookline Tab	On or before August 8, 2001

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

7-26-01
Date
Signature of Responsible Offic
or Proponent

7/26/01
Date
Signature of Person Preparing
ENF (in different from above)

Andrew D. Brennan
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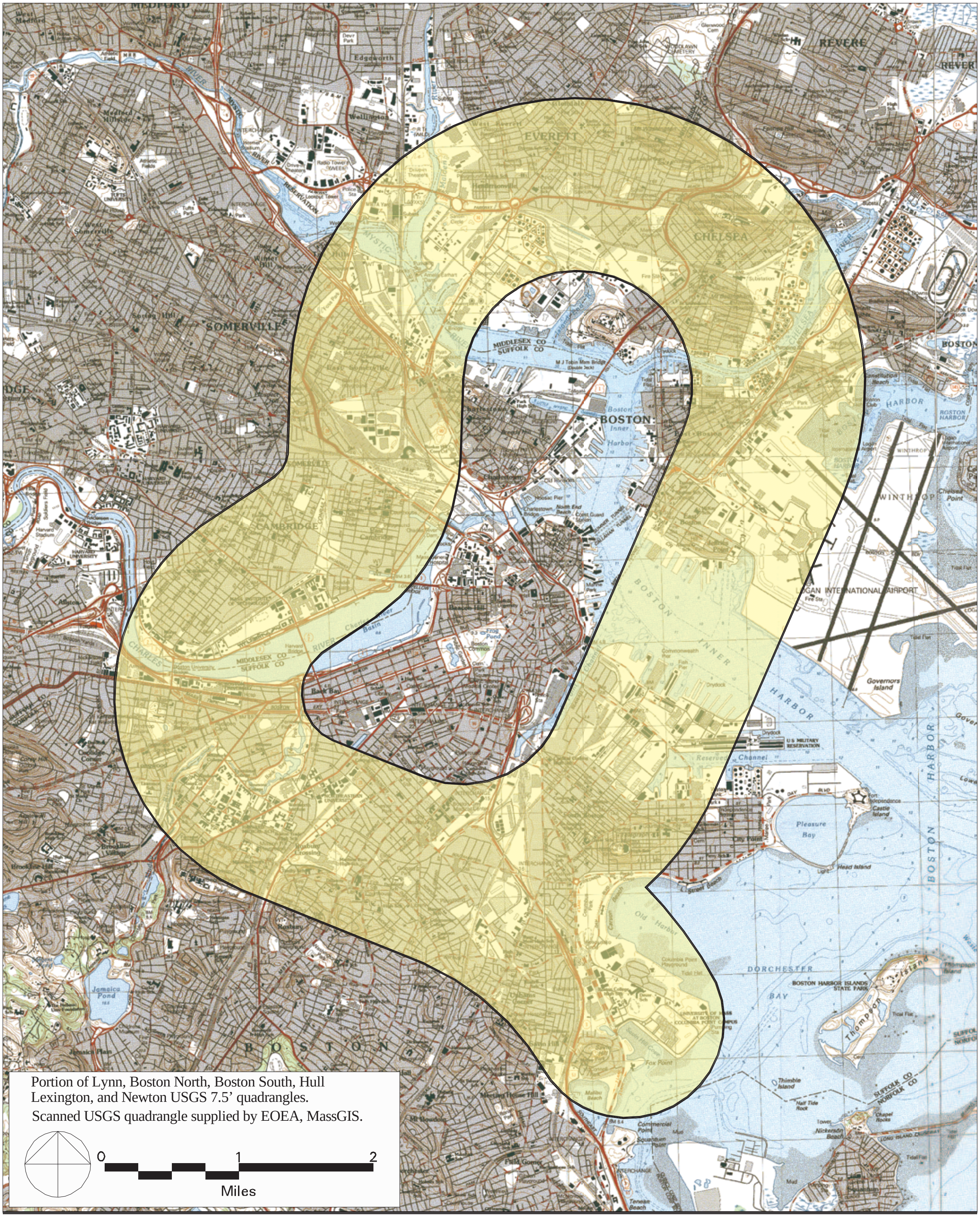
Attachment 1

Urban Ring Corridor Study Area Map

Attachment 1



Portion of Lynn, Boston North, Boston South, Hull
Lexington, and Newton USGS 7.5' quadrangles.
Scanned USGS quadrangle supplied by EOEA, MassGIS.

Urban Ring Corridor
Study Area

Attachment 2

Detailed Descriptions, Plans, and Schedule of the Proposed Project by Phase

- Phase 1 – Improved Bus Service (TSM)
- Phase 2 – Bus Rapid Transit (BRT)
- Phase 3 – Rail
    - Alternative A1 (Light Rail via Kenmore)
    - Alternative A2 (Heavy Rail via Kenmore)
    - Alternative B (Light Rail via BU/Park Drive)
- Project Schedule

Attachment 2
Project Description – Phase 1

Phase 1 - Improved Bus Service

Phase 1 proposes a significant expansion in the number and reach of the Crosstown (CT) bus routes, and the addition of new Express Commuter (EC) service to provide single seat radial and crosstown service from suburban locations into the Corridor. The Phase 1 bus routes considered in the final evaluation are described below and depicted in the Figure that follows. Also referred to as TSM, the Phase 1 bus routes will utilize 40-foot, low-floor, low-emission buses.

All the EC routes will operate similar to existing MBTA Express Bus service (including “reverse direction” service). There are a total of 11 CT routes consisting of modifications to three existing CT routes and the addition of eight new CT routes. The CT routes will operate similar to existing MBTA CT limited-stop service connecting rapid transit nodes and major activity.

The proposed route descriptions shown below list the proposed bus stops (underlined) and the streets followed by the route between each bus stop. The proposed implementation schedule and estimated costs for Phase 1 follows.

It had been assumed throughout the MIS that implementation of the Phase 1 routes will not occur all at once, but rather as resources become available. The Phase 1 routes will be prioritized for implementation and the specifics of the routing and bus stop locations would be worked out as part of the MBTA Service Planning Process contingent upon availability of capital funds for the timely procurement of vehicles and modifications to bus maintenance facilities, and increases in the annual operating and maintenance budget.

Express Commuter (EC) Route Descriptions

All proposed routes would operate similar to existing MBTA Express Bus service (including “reverse direction” service) with 12-minute headways.

EC1	Woburn Intermodal Center to University Park in Cambridge via Sullivan Square and Lechmere. This route as originally defined terminated at Kendall/MIT. Sensitivity analysis was then performed that showed ridership would grow significantly if the route were extended to University Park.
Route:	*Woburn/Mishawum (relocated), I-93, Mystic Avenue, Sullivan Station, Washington Street, McGrath Highway, Msgr. O’Brien Highway, Lechmere Station, First Street, Binney Street, Broadway, Main Street, Kendall/MIT Station, Main Street, Massachusetts Avenue, University Park.*
EC2	Riverside to Lechmere via Newton Corner, Allston Landing, Central Square and Kendall Square.
Route:	*Riverside Station, Grove Street, Route 128, I-90, Newton Corner, I-90, Allston interchange, Allston Landing (TBD), River Street (inbound)/Western Avenue (outbound), Central Station, Massachusetts Avenue, Main Street, Broadway, Main Street, Kendall/MIT Station, Binney Street, First Street, Lechmere Station.*
EC3	Route 9 Natick to Kenmore Square via Wellesley Hills, Riverside, Newton Corner and Longwood Medical Area. (As discussed later in Chapter 4, projected ridership for the EC3 route is very low and it was agreed that the EC3 route is not recommended for implementation.)
Route:	*Route 9 Natick, Wellesley Hills, Riverside Station, Grove Street, Rte. 128, I-90, Newton Corner (Center Street), I-90, Copley/Back Bay interchange, Huntington Avenue, Louis Prang Street, Fenway, Avenue Louis Pasteur, Longwood Medical Area, Longwood Avenue, Brookline Avenue, Kenmore Station*

Proposed Modified Crosstown (CT) Bus Routes

All proposed routes would operate similar to existing MBTA Crosstown (CT) limited-stop service connecting rapid transit nodes and major activity centers with assumed 10-minute peak period headways and 20-minute off-peak headways.

CT1 Central Square to Andrew Station via Massachusetts Avenue.

Route: *Central Square, Massachusetts Avenue, University Park, MIT, Hynes/ICA , Symphony, Massachusetts Avenue, Silver Line/Washington Street, City Hospital/BU Medical Area, Southampton Street, Newmarket/South Bay, Andrew Station.*

The existing CT1 route, which currently terminates at the Boston Medical Center, would be modified by extending it further east to Andrew Station on the Red Line. This extension will increase the geographic reach of single-seat rides on the CT1 and will connect this crosstown bus route with an additional radial transit line. This modification also enables the CT3 route to be streamlined as described below.

CT2 Sullivan Square to LMA via Union Square and Kendall.

Route: *Sullivan Station, Washington Street, Union Square, Webster Avenue, Cambridge Street, Columbia Street, Hampshire Street, Kendall/MIT Station, Broadway (inbound)/Main Street (outbound), Vassar Street, MIT/MassAve, Amesbury, Memorial Drive, BU Bridge, Boston University, Mountford Street, Park Drive, Fenway, Brookline Avenue, Longwood Avenue, Longwood Medical Area*

The CT2 route would be extended northward from Kendall/MIT to Sullivan Square via Union Square, as defined by this study, during the course of the Urban Ring MIS. Other modifications identified for Phase 1 of the Urban Ring include increased frequency of service and more efficient routing through major activity centers such as the Longwood Medical Area and Kendall/MIT.

CT3 Longwood Medical Area to Logan Airport via Bio Square.

Route: *LMA, Fenway, Louis Prang Street, Green Line/Museum, Ruggles Street, Ruggles Station, Melnea Cass Boulevard, Washington Street/Silver Line Station, Albany Street, Bio Square, South Boston Bypass, Convention Center, Ted Williams Tunnel, Logan Airport, Airport Blue Line Station.*

The existing CT3 route would be modified to reduce overall trip times on what is now one of the longest routes in the system. Existing travel times on this route during peak hour are lengthy and user perception of delay is worsened by the existing stop at Andrew on the Red Line. Extending the CT1 route to Andrew Station as described above preserves crosstown service at Andrew while enabling the CT3 route to bypass Andrew, thereby reducing travel time and improving schedule adherence on the CT3.

As defined, the CT3 route would continue to operate over the South Boston Haul Road as it does today. However, based on environmental permitting governing use of that facility, upon completion of the Central Artery Project the Haul Road may be restricted to trucks only and may no longer be available to buses. An alternate route for the CT3 to reach the South Boston Waterfront and Williams Tunnel would be the HOV lanes within the final design of the Southeast Expressway. Issues associated with that option are discussed in the Phase 2 paragraph under the BRT7 route.

Attachment 2
Project Description – Phase 1

Proposed New Crosstown (CT) Bus Routes[1]

CT4	Ruggles Station to JFK/UMass via Dudley Square and Uphams Corner.
Route:	*Ruggles Station, New Dudley Street (outbound)/Ruggles Street (inbound), Dudley Square, Dudley Street, Hampden Street, Uphams Corner, Columbia Road, Edward Everett Square, JFK/UMass, Mount Vernon Street, UMass Campus.*
CT5	Logan Airport to Sullivan Square via Chelsea and Everett.
Route:	*Logan Airport Terminals, Airport Blue Line Station, Route 1A, Wood Island Station, Chelsea Street, Chelsea Street Bridge, Massport Chelsea Garage, Central Avenue, Chelsea Downtown, Washington Avenue/Broadway, Chelsea Commuter Rail/Bellingham Square, Everett Avenue, Mystic Mall/Triangle, Everett Avenue, Revere Beach Pkwy., Revere Beach Parkway, Second Street, Broadway, Wellington, Fellsway, Assembly Square, Sullivan Square Station*.
CT6	Chelsea to Kendall Square via Community College and Lechmere.
Route:	*Bellingham Square (Chelsea Commuter Rail connection), Third Street ramp (outbound)/ Beacon Street ramp (inbound), Tobin Bridge, City Square interchange, Rutherford Avenue, Gilmore Bridge, Msgr. O'Brien Highway, Lechmere Station, First Street, Binney Street, Broadway, Main Street, Kendall/MIT Station.*
CT7	Kendall Square to Franklin Park/Grove Hall via Kenmore Sq., Ruggles, and Dudley.
Route:	*Kendall/MIT Station, Vassar Street, Massachusetts Avenue, MIT, Harvard Bridge, Beacon Street/Bay State Road/Sherborn Street/BU:Blandford Street/Commonwealth Avenue (outbound) / Commonwealth Avenue/Massachusetts Avenue (inbound), Kenmore Station, Brookline Avenue/Longwood Avenue, Longwood Medical Area, Huntington Avenue, Green Line/Museum, Ruggles Street, Ruggles Station, New Dudley Street (outbound)/Ruggles Street (inbound), Dudley Square, Dudley Street, Warren Street, Humboldt, Blue Hill Avenue, Grove Hall, Franklin Park Zoo.*
CT8	Sullivan Square to Longwood Medical Area via Union Square, University Park, Lower Cambridgeport and Boston University.
Route:	*Sullivan Station, Washington Street, Union Square, Somerville Avenue/Webster Avenue (outbound) / Prospect Street (inbound), Webster Avenue, , Cambridge Street, Columbia Street, University Park/Lafayette Square, Sidney Street (outbound) / Waverly Street/Albany Street/Massachusetts Avenue (inbound), Lower Cambridgeport (TBD), Henry Street, Prospect Street, BU Bridge, Boston University, Mountford Street, Park Drive, Fenway/Avenue Louis Pasteur (inbound) / Longwood Avenue/Brookline Avenue (outbound) Longwood Medical Area*

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[1] In Phase 1 the proposed CT3, CT4 and CT5 routes would serve locations currently served by non-MBTA shuttle bus operators. Implementation of Phase 1 service in such locations will be need to address issues of vehicle purchase, operating subsidy, 13(c) indemnification, and indemnification of competition claims from current shuttle contractors.

CT9	Kenmore Square to Harvard Square via Boston University and Allston Landing.
Route:	*Kenmore Station, Commonwealth Avenue, Boston University (at BU Bridge), Commonwealth Avenue, Packards Corner, Brighton Avenue, Harvard Avenue, Cambridge Street, Allston Landing (TBD), Route TBD, Western Avenue, North Harvard Street, Larz Anderson Bridge, JFK Street, JFK Street (inbound) / Brattle Street/Mount Auburn Street (outbound), Harvard Station*
CT10	Kenmore Square to JFK/UMass via Longwood Medical Area, MFA, Ruggles, Washington St/Silver Line, City Hospital, BU Medical Area, Newmarket/South Bay and Andrew.
Route:	*Kenmore Station, Brookline Avenue/Longwood Avenue/Avenue Louis Pasteur,Longwood Medical Area, Fenway, Louis Prang Street, Green Line/MFA Station, Ruggles Street, Ruggles Station, Melnea Cass Boulevard, Washington Street/Silver Line Station, Harrison Avenue, City Hospital, East Concord Street (outbound) / East Newton Street (inbound), BU Medical Area, BioSquare connector, Southeast Expressway, JFK/UMass Station*
CT11	Longwood Medical Area to Fields Corner via MFA, BU Medical and Uphams Corner.
Route:	*Longwood Medical Area, Louis Pasteur(outbound)/Huntington (inbound), Fenway, Louis Prang, Museum of Fine Arts, Ruggles Street, Melnea Cass Boulevard, Washington Street/Silver Line Station, Harrison Avenue, City Hospital, East Concord Street (outbound) / East Newton Street (inbound), BU Medical Area, Albany Street, Hampden Street, Dudley Street, Uphams Corner, Dudley Street, Columbia Road, Hancock Street, Kane Square, Bowdoin Street, Geneva Avenue, Fields Corner*

Overall Schedule

The projected overall schedule of implementation is within five years of completion of the MIS, namely July 31, 2006.

Implementation of Proposed Phase 1 Routes

The MIS defined and evaluated a total of fourteen CT and EC routes, three of which are existing CT routes that would be modified as part of Phase 1. Thus, only eleven of the routes in Phase 1 are new. Further, the evaluation of the routes concluded that the EC3 route did not generate sufficient ridership and should not be implemented reducing the total number of new routes to ten.

It had been assumed throughout the MIS that implementation of the Phase 1 routes will not occur all at once, but rather as resources become available. The Phase 1 routes will be prioritized for implementation and the specifics of the routing and bus stop locations would be worked out as part of the MBTA Service Planning Process contingent upon availability of capital funds for the timely procurement of vehicles and modifications to bus maintenance facilities, and increases in the annual operating and maintenance budget.

Bus Technology

The Phase 1 bus vehicles are planned to be the 40' long low-floor CNG powered buses consistent with those already ordered by the MBTA for use on other routes.

Bus Fleet Size

The number of buses needed to operate the Phase 1 EC and CT routes was calculated using the length of the route, the peak period headways, and the assumed average speed of the route including all stops (approximately 12mph). For example: A route that is 6 miles long in each direction requires 12 miles per round trip. At an average speed of 12mph that would take 60 minutes per complete cycle. Using 10 minute headways would require 6 buses on this route to provide the planned level of service. The two new EC routes being proposed, while long, operate at 12 minute peak headways, have higher average speeds, and require fewer buses per route mile than does the CT routes.

The three existing CT routes (CT1, CT2, CT3) already have vehicles but Phase 1 will double the frequency in the peak period from every 20 minutes to every 10 minutes. Therefore, for those routes it is assumed that the number of new buses needed would be half of what a comparable new route would require. The estimated number of new buses required to operate the proposed Phase 1 bus routes is 10 each for the two new EC routes plus 55 for the CT routes for a total of 75 buses. It is assumed that another 33% will be needed for spares which amounts to 25 additional buses. The percentage of spares is higher than used for diesel buses because CNG buses are currently less reliable than diesel buses. The total fleet size needed, including spares is 100 buses.

Vehicle Costs

The cost of these buses according to the MBTA memo titled “Roadmap to 358 Buses” dated 1/5/01 would be $400K/each based on the 15 unit New Flyers order, or $396K/each based on the 124 unit NABI order. The costs are so close we assumed $400K/each. Assuming that the additional buses needed for the Urban Ring Phase 1 can be procured for the same price, the total cost of the Phase 1 rolling stock would be 100 buses times the unit price of $400K for a total of $40 million.

Operation and Maintenance Costs

The annual Operation and Maintenance (O&M) costs will be a function of how many Phase 1 bus routes have been implemented. The estimated annual O&M costs of the Urban Ring routes at the completion of Phase 1 when all ten new routes and three modified existing routes are in operation is approximately $23 million.

Construction Costs

An allowance of $45 million was included in Phase 1 for yet to be defined expansion of existing MBTA bus storage and maintenance facilities needed to handle the additional buses used for the Urban Ring service.

Design and Other Costs

The $45 million construction cost allowance for the bus maintenance facility expansion does not include costs of design, project administration, construction management, or insurance. A total of $13.5 million is added for these costs.

Attachment 2
Project Description – Phase 1

Summary Table of Urban Ring Phase 1

Feature	Phase 1 Transportation System Management Improved Bus Service	
Time Frame	Years 0-5 from MIS completion as resources become available	
Technology	40' long, Low-Floor CNG Buses - Modified Existing Crosstown Routes - New Crosstown Routes - New Express Bus Service	
Fleet Size	100 Low-floor 40' CNG buses (75 service + 25 spares)	
Proposed Service	Three expanded and ten new Crosstown and express routes, implemented incrementally	
Capital Costs		
Vehicles	Vehicle cost 100 x $400K/ea =	$40 million
Construction	Construction cost allowance =	$45 million
Design/Other	Design, administration, construction management, insurance =	$13.5 million
Total		$98.5 million
O&M Costs	$23 million annually when all proposed Phase I services are implemented	

Note: All costs are in year 2001 constant dollars

Phase 2 – Bus Rapid Transit and Supporting Elements

Phase 2 builds upon the proposed EC and CT bus routes of Phase 1 by adding seven Bus Rapid Transit (BRT) routes throughout the Corridor. Some of the BRT routes in Phase 2 are new, and others are modified or upgraded versions of the Phase 1 bus routes. A total of seven BRT routes are proposed in Phase 2, as described below and depicted in the Figure that follows. Phase 2 BRT routes will utilize 60' articulated low-floor, low-emission vehicles, segments of exclusive busway, ITS features, and supporting elements to improve connections with radial transit and commuter rail lines.

The paragraphs below summarize the proposed changes to the Phase 1 service that occurs in Phase 2 and provides a list of the Phase 2 supporting elements such as new and improved commuter rail stations. Also provided is a detailed description of each of the seven routes with a general description of the station locations, proposed implementation schedule and costs for Phase 2.

Implementation of the Phase 2 routes will not occur all at once, but rather as resources become available. Detailed BRT routing and station locations, and configuration of the commuter rail stations, will be determined during the DEIR/S process for Phase 2 and will be implemented contingent upon timely availability of capital and operating and maintenance funds.

Changes to Phase 1 Routes Occurring in Phase 2

Five of the Phase 1 bus routes (CT2, CT3, CT4, CT5, CT8) are proposed to be converted to Bus Rapid Transit service in Phase 2. One of the EC routes (EC1) would be dropped because it becomes redundant to a new Commuter Rail/BRT connection at Sullivan Square, and the CT11 route would be modified to follow the former CT4 route north of Dudley/Hampden corner to provide better coverage in tandem with the new BRT routes.

Supporting Elements: New or Expanded Commuter Rail Stations

The MBTA's extensive commuter rail system still lacks station stops within the Corridor on several of its lines, and most of the existing stations within the Corridor lack quality transit connections for crosstown trips. Suburban commuters bound for employment centers located within the Urban Ring Corridor often must take commuter rail past their actual destination all the way into North or South Station and transfer to a radial transit line for a trip back out to the Urban Ring Corridor. The MBTA has recently taken steps to address this problem with the institution of full-time commuter rail service at the Yawkey Station near Fenway Park and Longwood Medical Area, as well as the opening of a new commuter rail station on the Old Colony Line at JFK/UMass. However, while radial transit connections are good at these locations, reliable distribution of these trips along the crosstown Corridor remains a challenge using conventional buses on existing streets. Similarly, access from Corridor neighborhoods to commuter rail to reach suburban locations in a reverse commute pattern is also difficult.

In Phase 2, the Urban Ring would build upon the considerable investments already made by the MBTA in its commuter rail system by providing the following new or improved facilities that will enable convenient transfers between commuter rail and the Urban Ring services:

Downtown Chelsea:	Expand and improve existing station on the Newburyport/Rockport Line
Sullivan Square:	New station stop near junction of the Newburyport/Rockport and Haverhill Lines
Gilman Square:	New station stop on the Lowell Line
Union Square:	New station stop on the Fitchburg Line
Yawkey:	Expand and improve existing station on the Framingham/Worcester Line
Ruggles:	Expanded stop with platforms on both sides of Northeast Corridor
Uphams Corner:	Improved stop on the Fairmont Line

BRT Service Frequency

Each of the BRT routes is proposed to have all day service with the following headways:

- 10 minute Morning/Evening peak headway
- 15 minute Midday/Saturday headway
- 20 minute Evening/Sunday/Holiday headway

Where routes would overlap in portions of the Corridor the effective headways for BRT service between many stations is projected to be more frequent than shown. The BRT routes is proposed to operate over a combination of separate rights-of-way and mixed traffic, utilizing Intelligent Transportation System (ITS) features to improve performance and passenger information.

BRT Route Descriptions and Stations[1]

There are a total of seven Urban Ring BRT routes proposed in Phase 2 which together provide service throughout the 15-mile long corridor. Several of the routes would overlap, particularly in the most heavily traveled portions of the Corridor. Table 3-6 contains a listing of the Phase 2 and Phase 3 stations, the municipality in which they would be located, and the intermodal connections that would be available to them. A summary list of the seven routes is provided below followed by a full description of each route with an identification of each proposed BRT station (underlined).

BRT1	Logan Airport Terminals to Kendall Square
BRT2	Logan Terminals to Wellington
BRT3	Wellington to Kendall Square
BRT4	Riverside to Kendall Square
BRT5	New Lechmere to Longwood Medical Area
BRT6	Longwood Medical Area to UMass Campus
BRT7	Longwood Medical Area to Airport Blue Line Station

BRT1	Logan Airport Terminals to Kendall Square via Wellington, Assembly Square, Sullivan Square and New Lechmere.
Route:	*Logan Airport Terminal, Terminal Roadways, Airport Blue Line Station, East Boston BRT/Truck Route (new), Chelsea Street, Chelsea Creek Bridge, BRT Busway (new), Downtown Chelsea/Commuter Rail, BRT Busway (new), Everett Avenue/Mystic Mall, Everett Avenue, Chelsea HS, Revere Beach Parkway, Second Street, Revere Beach Parkway, Broadway, Revere Beach Parkway, Wellington, Fellsway, Assembly Square, Mystic Avenue, Sullivan Square, Rutherford Avenue Bypass (new), Gilmore BRT Busway (new), New Lechmere, First Street, Cambridgeside Galleria, First Street, Binney Street, Second Street, Third Street, Kendall/MIT.*

The proposed BRT1 route would provide local service with a single seat ride across the entire northern portion of the Corridor from Logan Airport through Chelsea, Everett, Wellington, Somerville, and Cambridge. There are 14 station stops planned along this 10-mile long route. Three segments of the route totaling approximately 3 miles would operate over exclusive or semi-exclusive rights-of-way.

- Airport Blue Line Station to Chelsea Creek in East Boston
- Chelsea Creek through East Chelsea to Everett Avenue in Chelsea
- Rutherford Avenue to New Lechmere in Charlestown and Cambridge

The balance of the BRT1 route would operate in bus lanes and mixed traffic facilitated by ITS features to be defined during the environmental process for Phase 2.

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[1] In Phase 2 the proposed BRT1, BRT2 and BRT6 routes would serve locations currently served by non-MBTA shuttle bus operators. Implementation of Phase 2 service in such locations will be need to address issues of vehicle purchase, operating subsidy, 13(c) indemnification, and indemnification of competition claims from current shuttle contractors to the extent that they have not already been resolved in Phase 1.

BRT2	Logan Airport Terminals to Wellington with Limited Stops via Revere Beach Parkway.
Route:	*Logan Airport Terminal, Terminal Roadways, Airport Blue Line Station, East Boston BRT/Truck Route (new), Chelsea Street, Chelsea Creek Bridge, BRT Busway (new), Downtown Chelsea/Commuter Rail, BRT Busway (new), Everett Avenue/Mystic Mall, Everett Avenue, Revere Beach Parkway, Wellington.*

The proposed BRT2 route would provide express service across the northern portion of the Corridor providing rapid connections between Logan Airport on the east and Wellington on the west with only limited stops in between where its route overlaps the BRT1 service. There are 5 station stops planned along this 6-mile long route. Two segments of the route totaling approximately 2.5 miles would operate over exclusive or semi-exclusive rights-of-way.

- Airport Blue Line Station to Chelsea Creek in East Boston
- Chelsea Creek through East Chelsea to Everett Avenue in Chelsea

The balance of the BRT2 route would operate in bus lanes and mixed traffic facilitated by ITS features to be defined during the Phase 2 environmental process.

BRT3	Wellington to Kendall Square via Union Square.
Route:	*Wellington, Fellsway/O'Brien Highway, Pearl Street, Gilman Square, Medford Street, O'Brien Highway, Somerville Avenue, Union Square, BRT Busway adjacent to north side of Fitchburg commuter rail line (new), O'Brien Highway, New Lechmere, First Street, Cambridgeside, Binney Street, Second Street, Third Street, Kendall/MIT.*

The proposed BRT3 route would provide service aimed at connecting the East Somerville activity centers of Union Square, Gilman Square, and Assembly Square with each other, and with the radial transit and commuter rail lines and activity centers to the north and south. There are 6 station stops planned along this 5-mile long route. One segment of the route totaling approximately a mile would operate over exclusive or semi-exclusive rights-of-way.

- Union Square to New Lechmere

The balance of the BRT3 route would operate in bus lanes and mixed traffic facilitated by ITS features to be defined during the Phase 2 environmental process.

BRT4	Riverside to Kendall Square via MassPike Bus Ramp.
Route:	*Riverside, Massachusetts Turnpike (I-90), MassPike Bus Ramp (new), BRT Busway across Grand Junction Charles River Bridge (modified), BRT Busway along Grand Junction (new), Cambridgeport, BRT Busway along Grand Junction (new), MIT/MassAve, BRT Busway along Grand Junction (new), Main Street, Mid-Block Connector, Broadway, Kendall/MIT.*

The proposed BRT4 route would provide a single seat ride between suburban locations near the junction of Route 128/MassTurnpike and employment centers in East Cambridge featuring an exclusive busway connection between the MassPike and East Cambridge. There are 7 station stops planned along this 11-mile long route. One segment of the route totaling approximately a mile would operate over exclusive or semi-exclusive rights-of-way by modifying the Grand Junction Railroad bridge over the Charles River to include a busway and using a portion of the Grand Junction right-of-way through the MIT campus.

- MassPike to Main Street East Cambridge along the Grand Junction right-of-way

Alternatively, the route may follow Vassar Street between Cambridgeport and Main Street in Cambridge rather than the Grand Junction alignment that was the basis of the ridership forecasting presented in the MIS. The specific routing of the BRT through this portion of the corridor will be determined during the Phase 2 environmental process. The balance of the BRT4 route would operate in bus lanes and mixed traffic facilitated by ITS features.

BRT5 New Lechmere to Longwood Medical Area via BU/Park Drive.

Route: *New Lechmere, First Street, Cambridgeside Galleria, First Street, Binney Street, Second Street, Third Street, Main Street, Kendall/MIT, Main Street, BRT Busway along Grand Junction (new), MIT/Mass Avenue, BRT Busway along Grand Junction (new), Cambridgeport, BRT Busway along Grand Junction (new), BRT Busway across Grand Junction Charles River Bridge (modified), BRT Busway Tunnel under MassPike (new), Mountfort Street, BU/St. Mary's Street, Park Drive, Green Line D/Fenway, Sears Rotary, Fenway, Emmanuel, Avenue Louis Pasteur, Longwood Medical Area.*

The proposed BRT5 route would provide a single seat ride in one of the most heavily traveled portions of the Corridor linking activity centers and neighborhoods on the north and south sides of the Charles River. It will supersede the Phase 1 CT2 route and provide travel time advantages through use of the Cambridge busway and Charles River bridge described in BRT4, as well as a busway tunnel beneath the MassPike connecting the Charles River Bridge to Mountfort Street and Park Drive in Boston. There are 10 station stops planned along this 4-mile long route. Two segments of the route totaling approximately 1-1/2 miles would operate over exclusive or semi-exclusive rights-of-way by modifying the Grand Junction Railroad bridge over the Charles River to include a busway and using a portion of the Grand Junction right-of-way through the MIT campus, the tunnel under the MassPike, and implementation of a contra-flow bus lane along the Fenway.

- Main Street East Cambridge to Mountfort/Park Drive in Boston
- Fenway contra-flow bus lane

As mentioned in BRT4, alternatively the route may follow Vassar Street between Cambridgeport and Main Street in Cambridge rather than the Grand Junction alignment that was the basis of the ridership forecasting presented in the MIS. The specific routing of the BRT through this portion of the corridor will be determined during the Phase 2 environmental process. The balance of the BRT5 route would operate in bus lanes and mixed traffic facilitated by ITS features.

BRT6 Longwood Medical Area to UMass Campus via Uphams Corner.

Route: *Longwood Medical Area, Longwood Avenue, Brookline Avenue, Beth Israel Hospital, Fenway, Louis Prang, Green Line E, Ruggles Street BRT Busway (new), Ruggles, Melnea Cass BRT Busway (new), Silver Line at Washington Street, Melnea Cass BRT Busway (new), Harrison Avenue, City Hospital, Harrison Avenue, East Concord Street, Biosquare, Albany Street, Crosstown, Hampden Street, Blue Hill Avenue, Dudley Street, Uphams Corner, Columbia Road, Edward Everett Square, Columbia Road, JFK/UMass, Morrissy Boulevard, UMass Campus.*

The proposed BRT6 route would provide a single seat ride linking activity centers and neighborhoods in Roxbury/Dorchester with the educational, retail, and employment opportunities of UMass to the east, Crosstown/City Hospital to the north, and Northeastern/Wentworth and Longwood Medical Area to the northwest. It would also link these neighborhoods to every existing and planned radial transit and commuter rail line located between these points thereby providing connectivity to the entire MBTA system. There are 11 station stops planned along this 6-mile long route. Two segments of the route totaling approximately a mile would operate over exclusive or semi-exclusive rights-of-way.

- Ruggles Street busway between Huntington Avenue and Ruggles
- Melnea Cass Boulevard busway between Ruggles and Harrison Avenue

Additionally, some short segments of exclusive busway may be implemented at Uphams Corner to enable the BRT vehicles to avoid congestion at locations such as the corner of Dudley Street and Columbia Road. The specific alignment is to be determined during the Phase 2 environmental process. The balance of the BRT5 route would operate in bus lanes and mixed traffic facilitated by ITS features.

BRT7	Longwood Medical Area to Airport Blue Line Station via South Boston and Williams Tunnel.
Route:	*Longwood Medical Area, Avenue Louis Pasteur, Emmanuel, Fenway, Louis Prang, Green Line E, Ruggles Street BRT Busway (new), Ruggles, Melnea Cass BRT Busway (new), Silver Line at Washington Street, Melnea Cass BRT Busway (new), Albany Street, Crosstown, Albany Street, Biosquare, BRT Connector Road, Mass Avenue Connector, South Boston Haul Road, Convention Center, I-90/Williams Tunnel, Logan Terminal Roadway, Logan Terminal, Logan Terminal Roadway, Airport Blue Line.*

The proposed BRT7 route would provide a single seat ride linking the LMA-City Hospital corridor with the South Boston Waterfront and Logan Airport. It also links these neighborhoods to every existing and planned radial transit and commuter rail line located between these points thereby providing connectivity to the entire MBTA system. There are 8 station stops planned along this 8-mile long route. Three segments of the route totaling over 2 miles would operate over exclusive or semi-exclusive rights-of-way.

- Ruggles Street busway between Huntington Avenue and Ruggles
- Melnea Cass Boulevard busway between Ruggles and Harrison Avenue
- South Boston Haul Road

As an alternate to the South Boston Haul Road the BRT7 route may instead utilize the I-93 HOV lanes between Southampton Street and I-90 where it would exit to serve the Federal Courthouse area on the way to and from the Williams Tunnel. This option presents design challenges to enter and exit the I-93 HOV lanes at the MassAvenue Connector Road. The specific alignment is to be determined during the Phase 2 environmental process. The balance of the BRT7 route would operate in bus lanes and mixed traffic facilitated by ITS features.

Overall Schedule
The projected overall schedule of implementation for Urban Ring Phase 2 is within ten years of completion of the MIS, namely July 31, 2011.

Implementation of Proposed BRT Routes and Supporting Elements
The MIS defined and evaluated a total of seven Bus Rapid Transit (BRT) routes and the addition of supporting elements consisting of new and improved commuter rail stations. The seven BRT routes are proposed to operate in conjunction with the non-redundant CT and EC bus routes previously implemented in Phase 1.

Implementation of the Phase 2 routes will not occur all at once, but rather as resources become available. Detailed BRT routing and station locations, and configuration of the commuter rail stations, will be determined during the DEIR/S process for Phase 2 and will be implemented contingent upon timely availability of capital and operating and maintenance funds. Once the BRT vehicles are obtained and ITS features deployed some of the BRT routes could be implemented on an interim basis in advance of completing construction of the BRT busway segments and new commuter rail stations.

BRT Technology

The Urban Ring Phase 2 BRT vehicles are planned to be 60' long low-floor, articulated, CNG powered technology consistent with those already ordered by the MBTA for use on the Washington Street segment of the Silver Line.

BRT Fleet Size

The number of BRT buses needed to operate the Phase 2 routes was estimated using the length of the route, the peak period headways, and the assumed average speed of the route including all stops (approximately 15mph). The assumed 15mph average speed of the BRT routes represents a 20% improvement over the assumed Phase 1 speeds based on implementation of ITS features and segments of exclusive busway. For example: A route that is 7.5 miles long in each direction requires 15 miles per round trip. At an average speed of 15mph that would take 60 minutes per complete cycle. Using 10 minute peak period headways for the Phase 2 BRT would require 6 buses on this route to provide the planned level of service.

Thus, it is estimated that a minimum of 40 new BRT buses will be required to operate the proposed Phase 2 routes at ten-minute headways. It is assumed that another 50% will be needed for spares, which amounts to 20 additional buses. The percentage of spares is higher than used for diesel buses or 40' long CNGs because CNG buses are currently less reliable than diesel buses, and the 60' articulated CNG buses are technically more complex than 40' long buses and have not been in production as long. Ridership projections show very heavy demand for the BRT1 and BRT2 routes through Everett, Chelsea, and East Boston for which it may be necessary to provide service more frequently than every ten minutes. Providing 5-minute headways on these two routes would increase the fleet requirements by 13 vehicles plus 7 spares. The total Phase 2 BRT fleet size, including spares is estimated to be 40 + 20 + 13 + 7 = 80 BRT buses.

Vehicle Costs

The cost of these buses according to the MBTA memo titled "Roadmap to 358 Buses" dated 1/5/01 would be $750K/each based on the MBTA's current 44-unit Neoplan order for 60' long, low-floor, articulated CNG buses. Assuming that the additional BRT buses needed for the Urban Ring Phase 2 can be procured for the same price, the total cost of the Phase 2 rolling stock would be 80 vehicles times the unit price of $750K for a total of $60 million. Contingency on the price of the BRT vehicles for Phase 2 would cause this estimate to increase.

Supporting Elements

In Phase 2 the Urban Ring would build upon the considerable investments already made by the MBTA in its commuter rail system by providing new or improved facilities that will enable convenient transfers between commuter rail and the Urban Ring services.

Right-of-Way Costs

Most of the Phase 2 BRT routes will operate within existing roadway rights-of-way and other rights-of-way owned by the MBTA and local jurisdictions. However, it will be necessary to acquire some additional right-of-way for some segments of busway, BRT stations, and maintenance facilities. An allowance of $15 million is included for land acquisition.

Construction Costs

Phase 2 includes construction of BRT busways, bus lanes, structures, ITS systems, intersection improvements, BRT stations and amenities, new and improved commuter rail stations, and new and expanded bus and BRT maintenance facilities. The magnitude cost of this construction is $250 million. The addition of 50% construction contingency adds another $125 million for a construction cost total of $375 million.

Design and Other Costs
The construction cost shown above does not include costs of design, project administration, construction management, or insurance. A total of $50 million is added for these costs.

Operation and Maintenance Costs
The annual Operation and Maintenance (O&M) costs will be a function of how many Phase 2 BRT routes have been implemented and the number of Phase 1 routes continuing in operation during Phase 2. The estimated annual O&M costs of the Urban Ring at the completion of Phase 2 when all seven new BRT routes and are in operation along with the non-redundant Phase 1 routes is approximately $31 million. The O&M cost estimate would change if it became necessary to provide BRT service on any of the routes at a frequency greater than the assumed 10-minute headways.

Summary Table of Urban Ring Phase 2

Feature	Phase 2 BRT + Supporting Elements + TSM Bus Rapid Transit
Time Frame	Years 6-10 from MIS completion as resources become available
Technology	60' long, articulated, Low-Floor CNG Buses - ITS features - Some exclusive busways - Passenger information and amenities - New and expanded commuter rail connections
Fleet Size	80 BRT vehicles (53 service + 27 spares)
Proposed Service	Seven overlapping BRT routes with radial connections and feeder bus routes throughout the corridor.
Construction	Busways, structures, bus lanes, intersection modifications, ITS system, shelters, passenger info system, new and expanded commuter rail stations, and BRT maintenance facilities.
Capital Costs	
- **Vehicles**	$ 60 million
- **Right-of-Way**	$ 15 million
- **Construction**	$375 million
- **Design/Other**	$ 50 million
Total	$500 million
O&M Costs	$31 million ($10.5M/bus + $20.5 M/BRT) annually when all non-redundant CT, EC, and new BRT routes are implemented.

Note: All costs are in year 2001 constant dollars.

There are 10 LRT station stops proposed along the nearly 6-mile long LRT Route #1. Station spacing shown is in miles from each preceding station measured along the routes shown. The access to each station is by walk mode (W), driving and parking (D), or by kiss and ride (KR). In Alternative A1 the LRT system is all in tunnel except for a short segment near Sullivan Square and Assembly Square that is at-grade. All information in the following tables is conceptual and subject to change during the Phase 3 environmental process.

Station	Spacing	Access	Intermodal Connections
Assembly Square	0.00	W,D,KR	BRT1, T bus
Sullivan Square	0.36	W,D,KR	Orange,ComRail,BRT1,T bus
New Lechmere	0.87	W,KR	Green, BRT1/3/4/5, T bus
Kendall Square	0.97	W,KR	Red, BRT1/3/4/5 and T bus
MIT/Mass Ave.	0.49	W,KR	BRT4/5, T bus
Kenmore/Yawkey	0.98	W	GreenB/C/D, ComRail, T bus
Boylston/Park	0.43	W	BRT5, T bus
Longwood/Pasteur	0.56	W,KR	BRT5/6/7, T bus
Ruggles	0.70	W,D,KR	Orange,ComRail,BRT6/7,T bus
Dudley Square	0.62	W,D,KR	Silver Line, T buses
	5.98 miles		

End-to-end elapsed time (run + dwell) is projected to be 20 minutes 16 seconds for LRT Route #1 in Alternative A1.

° ***LRT Route #2 Description***

Between Medford Hillside and New Lechmere the proposed LRT Route #2 assumes the Green Line Extension stations, spacing, access, run times, dwell times and intermodal connections in the Regional Transportation Plan. At a junction located just north of New Lechmere the Urban Ring LRT Route #2 would switch from the Green Line onto the Urban Ring alignment from New Lechmere to Dudley Square. The route information shown for LRT Route #1 is applicable to LRT Route #2 from New Lechmere through Dudley Square.

Alternative A2 – Heavy Rail Via Kenmore

The following description pertains to Alternative A2. The rail element of Alternative A2 starts at Wellington (rather than Assembly Square) and its Assembly Square station is located closer to the midway point between Wellington and Sullivan Square due to use of Orange Line technology. From Sullivan Square northward to Wellington, the existing Orange Line test track would be relocated north of Wellington. This segment becomes a three-track combined Urban Ring/Orange Line operation. South of Sullivan Square, Alternative A2 follows the same alignment and has the same station locations as Alternative A1. Alternative A1of the Urban Ring includes the non-redundant conventional bus, BRT, and supporting elements of Phase 2.

° ***Changes to Phase 2 Routes***

BRT5	Dropped – The Heavy Rail route provides this service
BRT2	Modified – This route is changed from Revere Beach Parkway to the busway adjacent to commuter rail.

A single Urban Ring Heavy Rail route would be provided in Alternative A2, as described below and depicted in the Figure that follows. For planning purposes it is assumed that the Heavy Rail routes will utilize transit vehicles compatible with those currently in use on the MBTA Orange Line.

Use of Orange Line vehicles in Alternative A2 allows the Sullivan Square, Assembly Square, and Wellington Stations to operate as joint Urban Ring/Orange Line stations served by the existing Orange Line service and the new Heavy Rail route. At these three stations, the proposed 4-minute headway of the Urban Ring Heavy Rail route combined with the existing Orange Line 5 minute headway provide a total of 27 trains/hour (15/Urban Ring Heavy Rail + 12/Existing Orange Line) in this segment, for an effective headway of just over 2 minutes in the peak. South of Sullivan Square to Dudley Square along the Urban Ring corridor service would be provided with the single Heavy Rail route that has headways of 4 minutes in the peak period for a total of 15 trains/hour.

° ***Service Frequency***

- 4 minute Morning/Evening peak headway
- 10 minute Midday/Saturday headway
- 15 minute Evening/Sunday/Holiday headway

° ***Heavy Rail Route Description***

There are 11 Heavy Rail station stops planned along this nearly 7-mile long route. Two of the stations, Wellington and Sullivan Square, already exist and would require modification rather than new construction with this alternative. Station spacing shown is in miles from the preceding station measured along the routes shown. The access is by walk mode (W), driving and parking (D), or by kiss and ride (KR). In Alternative A2 the Urban Ring Heavy Rail route is 100% in tunnel south of its connection with the existing Orange Line at Sullivan Square. From Sullivan Square northward to Wellington the existing Orange Line test track would be relocated to the north of Wellington and this segment becomes a three track combined Urban Ring/Orange Line operation.

Station	Spacing	Access	Intermodal Connections
Wellington	0.00	W,D,KR	BRT1/2/3, T bus, TelecomTMA
Assembly Square	0.60	W,D,KR	BRT1, T bus
Sullivan Square	0.60	W,D,KR	Orange,ComRail,BRT1,T bus
New Lechmere	0.87	W,KR	Green, BRT1/3/4/5, T bus
Kendall Square	0.97	W,KR	Red, BRT1/3/4/5 and T bus
MIT/Mass Ave.	0.49	W,KR	BRT4/5, T bus
Kenmore/Yawkey	0.98	W	GreenB/C/D, ComRail, T bus
Boylston/Park	0.43	W	BRT5, T bus
Longwood/Pasteur	0.56	W,KR	BRT5/6/7, T bus
Ruggles	0.70	W,D,KR	Orange,ComRail,BRT6/7,T bus
Dudley Square	0.62	W,D,KR	Silver Line, T buses
	6.82 miles		

End-to-end elapsed time (run + dwell) is projected to be 20 minutes 55 seconds for the Heavy Rail route in Alternative A2. Because it starts at Wellington rather than Sullivan Square a direct comparison of end-to-end times with Alternative A1 is only possible between Sullivan Square and Dudley Square. Between those same end points, alignment, and station locations Alternative A2 elapsed time is projected to be approximately 2 minutes faster than Alternative A1, primarily due to higher performance characteristics of Heavy Rail. Dwell times were assumed to be the same at each station for Alternatives A1 and A2. It is, however, possible that the Heavy Rail would load and unload faster than LRT during peak loads due to the high level platform and flat floor throughout the Heavy Rail vehicle and more convenient configuration of the door openings.

Alternative B – LRT Via BU/Park Drive

The following description pertains to Alternative B. It would cross the Charles River at Cambridgeport/BU and, compared to Alternatives A1 and A2, follows a longer route with more stations needed to connect with the MBTA radial lines. As with Alternative A1, Alternative B uses low-floor Light Rail Transit (LRT) technology compatible with the MBTA Green Line, and would interline with the standard Green Line Extension west of New Lechmere. The alignment and stations of Alternative B are mostly at-grade north of the Charles River and 100% in tunnel beneath the Charles River to Dudley Square. Alternative B of the Urban Ring includes the non-redundant conventional bus, BRT, and supporting elements of Phase 2.

° ***Changes to Phase 2 Routes***

BRT5	Dropped – The LRT routes provide this service
BRT2	Modified – This route is changed from Revere Beach Parkway to the busway adjacent to commuter rail.

Two overlapping LRT routes would be provided in Alternative B, as described below and depicted in the Figure that follows. For planning purposes it is assumed that the Urban Ring LRT routes will utilize Green Line compatible low-floor vehicles similar to the Type 8 cars currently being acquired by the MBTA.

Between Medford Hillside and New Lechmere the LRT Route #2 assumes the Green Line Extension in the Regional Transportation Plan. At a junction located just north of New Lechmere, the Urban Ring LRT Route #2 would switch from the Green Line onto the Urban Ring alignment from New Lechmere to Dudley Square.

The LRT Route #1 and Route #2 are proposed to overlap all Urban Ring LRT stations, except those located north of the Green Line Extension which are served only by the LRT Route #1. Thus, there are projected to be 18 Urban Ring trains per hour (12/LRT#1 + 6/LRT#2) during the peak for all Urban Ring LRT stations, except Assembly Square and Sullivan Square that are projected to be served by 12 Urban Ring trains per hour (12/LRT#1) during the peak.

° ***Service Frequency***

Proposed LRT Route #1 Service Frequency
- 5 minute Morning/Evening peak headway
- 15 minute Midday/Saturday headway
- 20 minute Evening/Sunday/Holiday headway

Proposed LRT Route #2 Service Frequency
- 10 minute Morning/Evening peak headway
- 15 minute Midday/Saturday headway
- 20 minute Evening/Sunday/Holiday headway

° ***LRT Route #1 Description***

There are 14 LRT station stops planned along this nearly 7-mile long route. Station spacing shown is in miles from the proceeding station measured along the routes shown. The access is by walk mode (W), driving and parking (D), or by kiss and ride (KR). In Alternative B the LRT system operates mostly on the surface in Somerville and East Cambridge except for a cut and cover tunnel section between New Lechmere and Broadway.

Station	Spacing	Access	Intermodal Connections
Assembly Square	0.00	W,D,KR	BRT1, T bus
Sullivan Square	0.36	W,D,KR	Orange,ComRail,BRT1,T bus
New Washington St.	0.45	W,KR	T bus
Fitchburg Street	0.44	W,KR	Green
New Lechmere	0.44	W,KR	Green, BRT1/3/4, T bus
Linskey Way	0.70	W	BRT1/3/4, T bus
Kendall Square	0.46	W,KR	Red, BRT1/3/4, T bus
MIT/Mass Ave.	0.39	W,KR	BRT4, T bus
Cambridgeport	0.58	W,KR	BRT4, T bus
BU Central/CRR	0.64	W,KR	Green B, ComRail, T bus
Green Line C/D	0.27	W,KR	Green C/D, T bus
Longwood/Pasteur	0.71	W,KR	BRT6/7, T bus
Ruggles	0.70	W,D,KR	Orange,ComRail,BRT6/7,T bus
Dudley Square	0.62	W,D,KR	Silver Line, T buses
	6.76 miles		

End-to-end elapsed time (run + dwell) is projected to be 25 minutes 16 seconds for LRT Route #1 in Alternative B.

- ***LRT Route #2 Description***

Between Medford Hillside and New Lechmere the LRT Route #2 assumes the Green Line Extension stations, spacing, access, run times, dwell times and intermodal connections in the Regional Transportation Plan. At a junction located just north of New Lechmere the Urban Ring LRT Route #2 would switch from the Green Line onto the Urban Ring alignment from New Lechmere to Dudley Square. The route information shown for LRT Route #1 is applicable to LRT Route #2 from New Lechmere through Dudley Square.

Details regarding the routes, stations, costs and schedule of the Phase 3 alternatives will be determined during the DEIR/S process.

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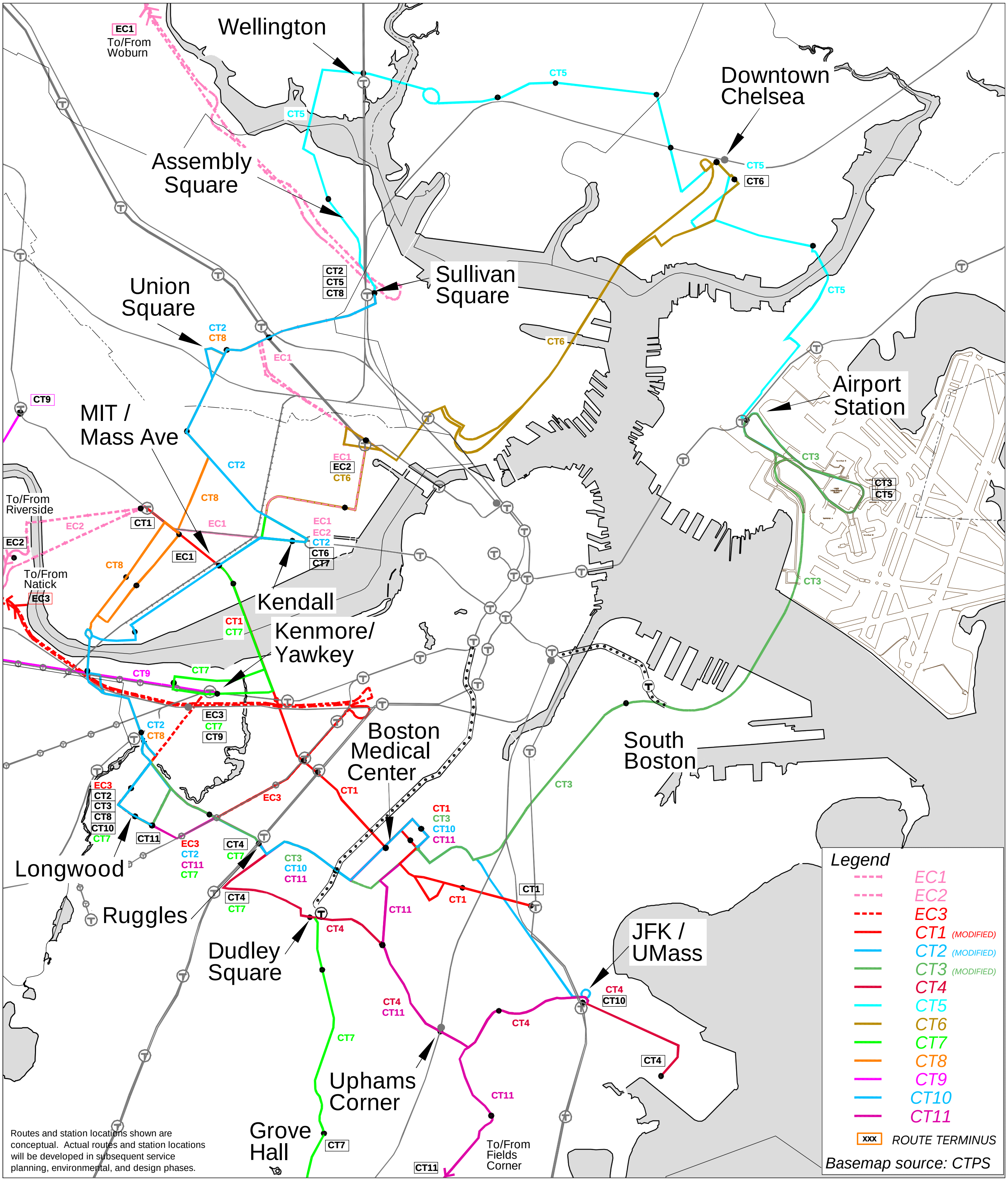

Routes and station locations shown are conceptual. Actual routes and station locations will be developed in subsequent service planning, environmental, and design phases.

Basemap source: CTPS

Urban Ring Corridor

Phase 1 - Improved Bus Service

JULY 2001

0 2250 4500 FT

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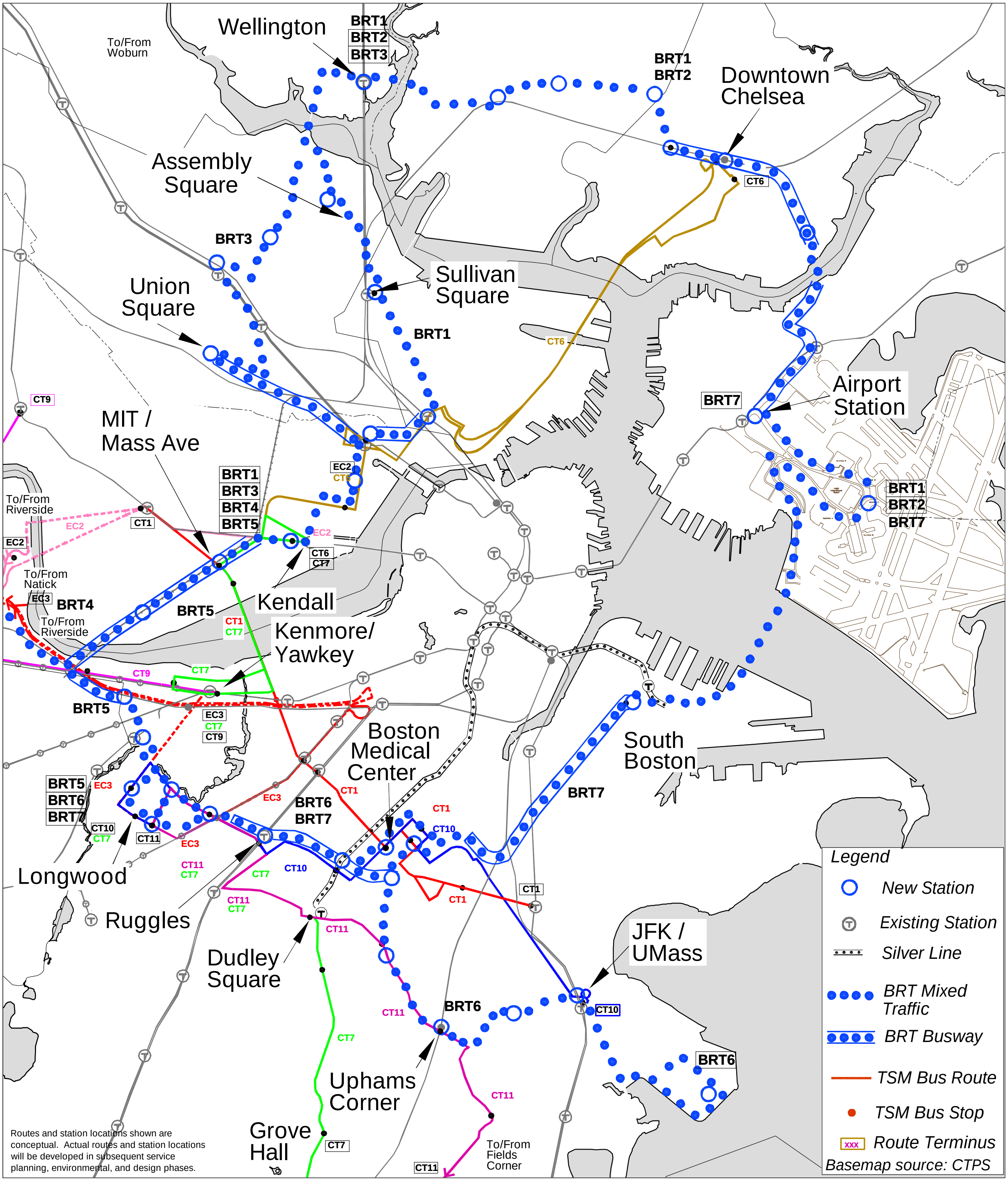

Routes and station locations shown are conceptual. Actual routes and station locations will be developed in subsequent service planning, environmental, and design phases.

Urban Ring Corridor

Phase 2 - Bus Rapid Transit (BRT)

JULY 2001

0 2250 4500 FT

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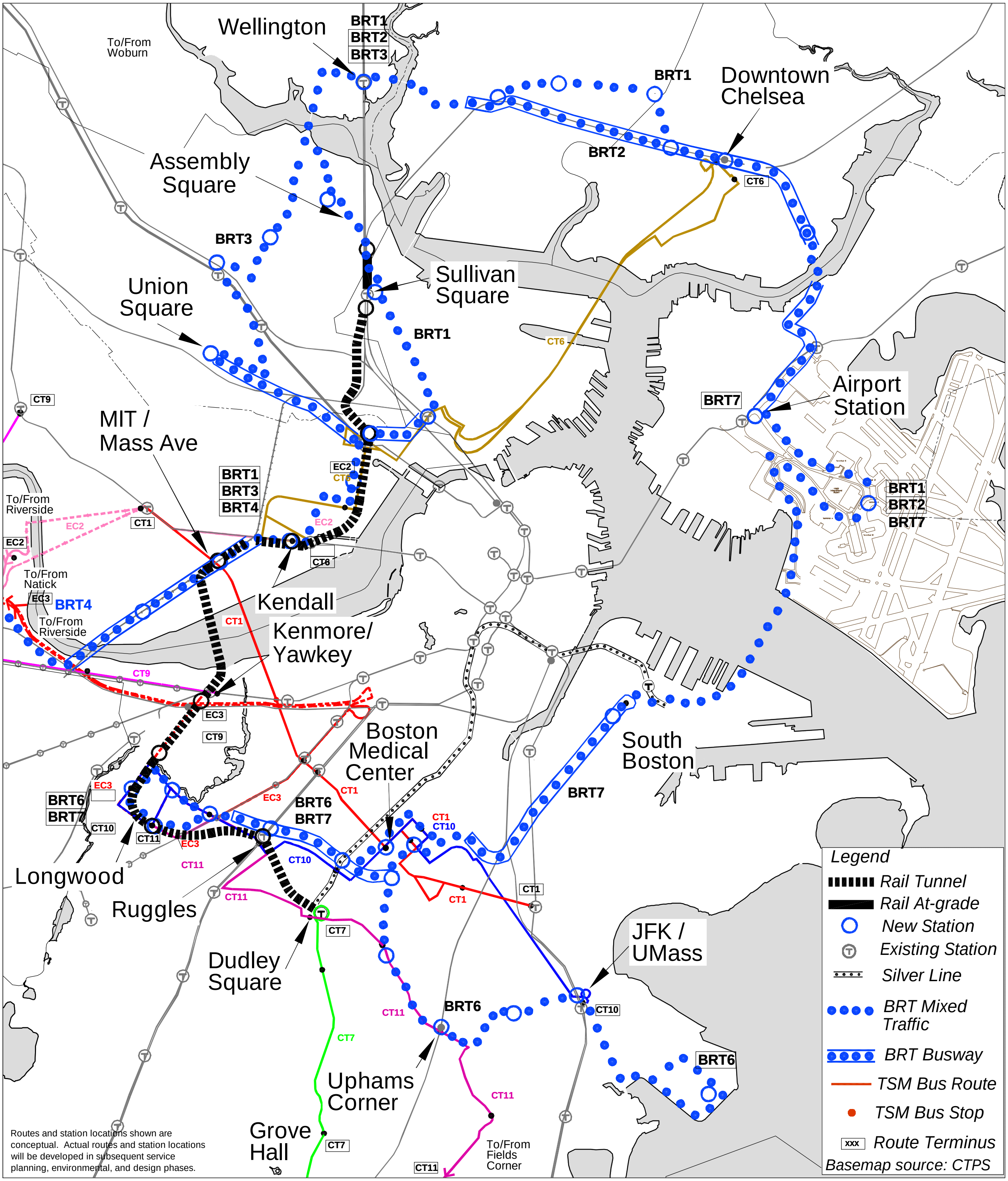

Routes and station locations shown are conceptual. Actual routes and station locations will be developed in subsequent service planning, environmental, and design phases.

Urban Ring Corridor

Phase 3 - Rail Alternative A1 - Kenmore

(LRT)

JULY 2001

0 2250 4500 FT

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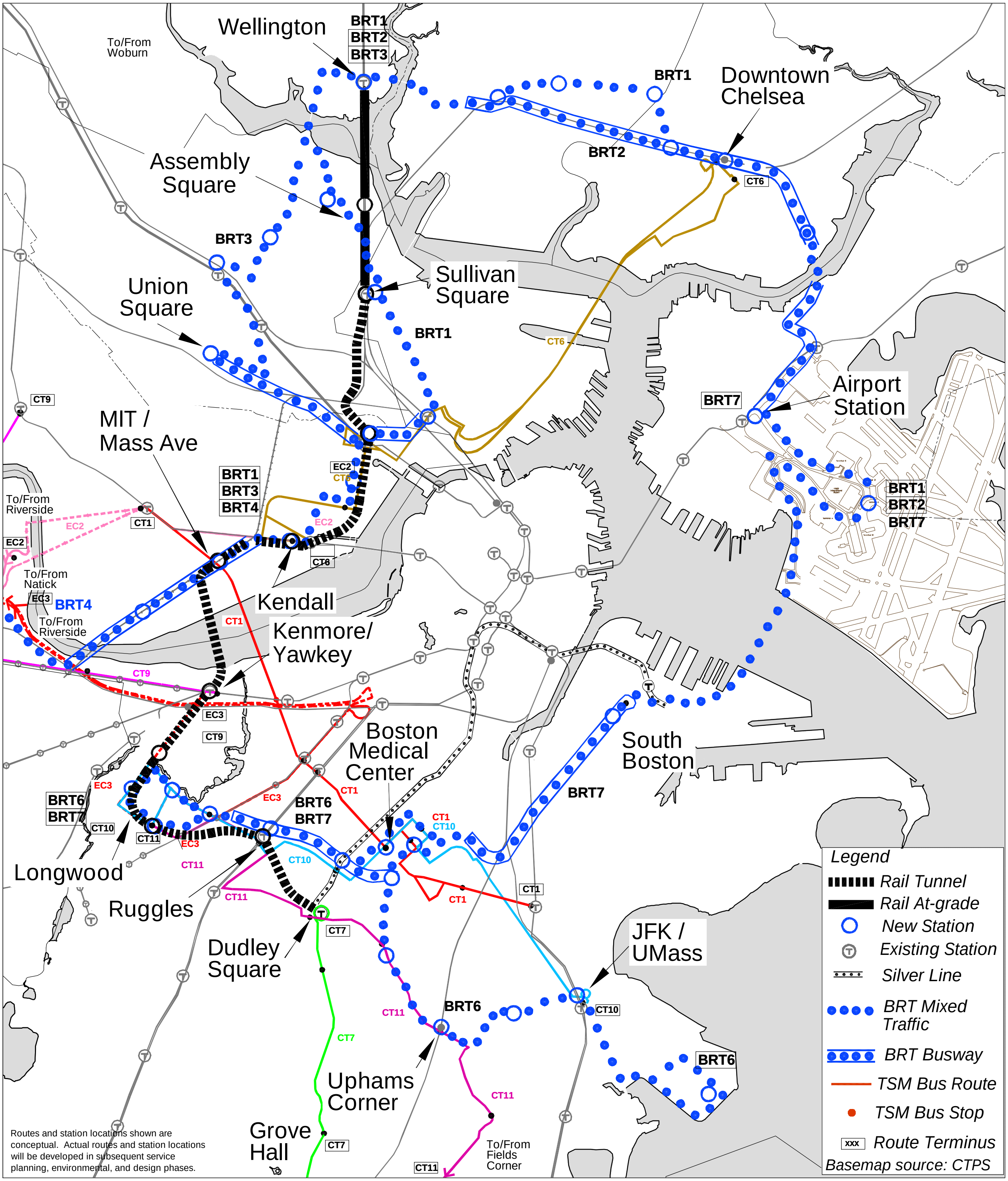

Routes and station locations shown are conceptual. Actual routes and station locations will be determined in subsequent service planning, environmental, and design phases.

Urban Ring Corridor

Phase 3 - Rail Alternative A2 - Kenmore

(Heavy Rail)

JULY 2001

0 2250 4500 FT

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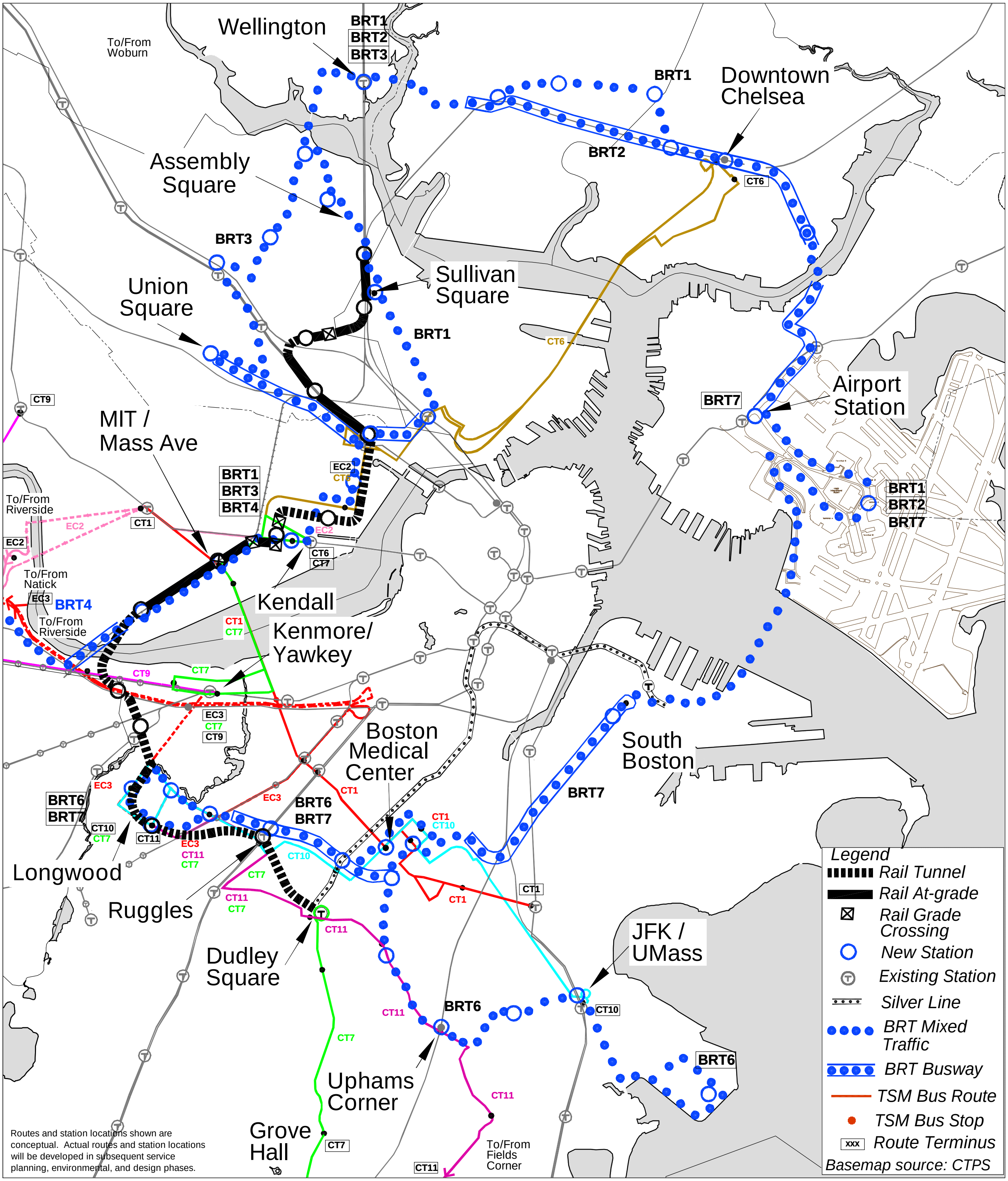


Routes and station locations shown are conceptual. Actual routes and station locations will be developed in subsequent service planning, environmental, and design phases.

Urban Ring Corridor

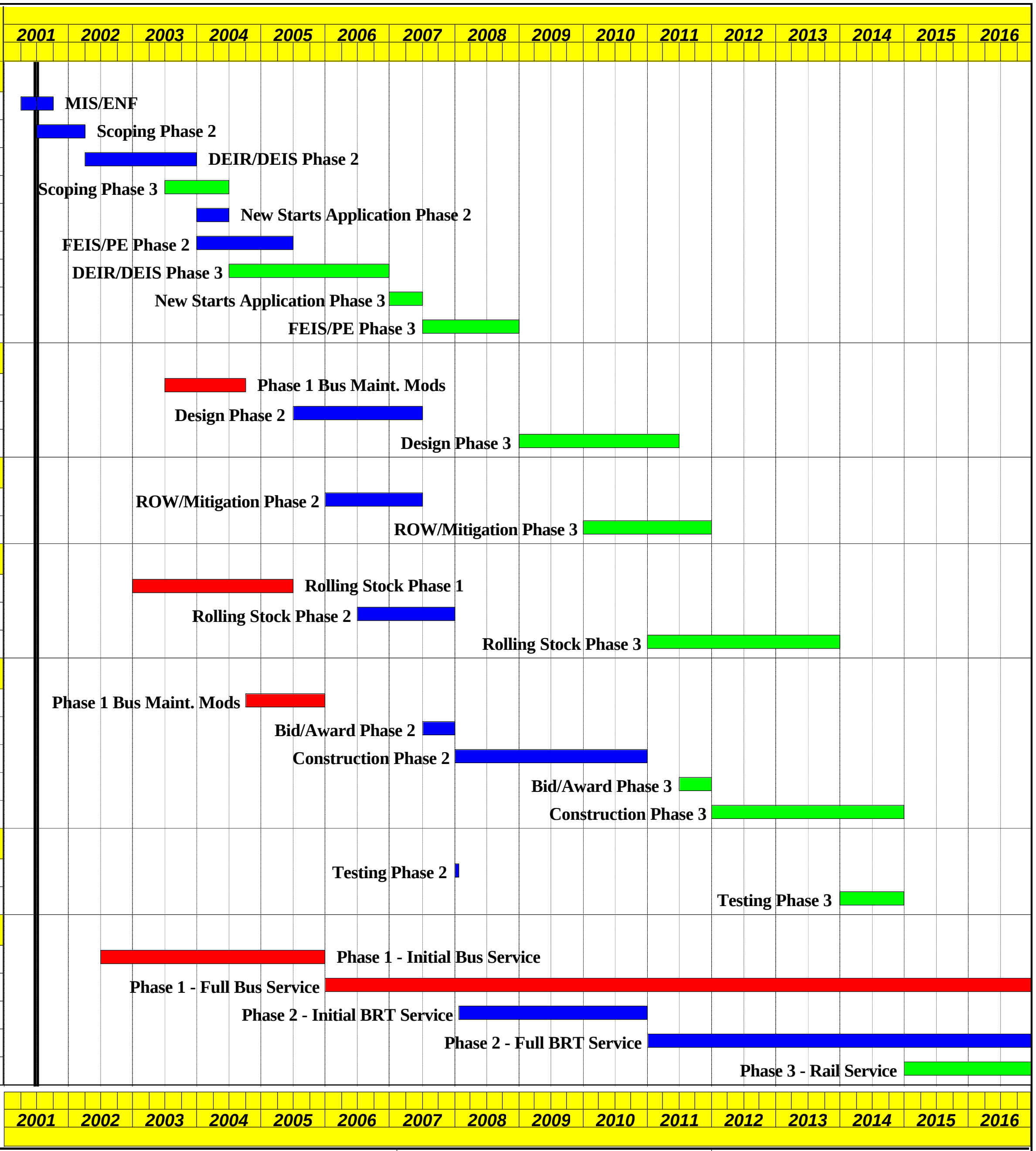
Phase 3 - Rail Alternative B - BU/Park Drive

(LRT)

JULY 2001

0 2250 4500 FT

Activity ID	*Activity Description*	*Early Start*	*Early Finish*
Environmental			
100	MIS/ENF	01APR01A	30SEP01
110	Scoping Phase 2	01JUL01	31MAR02
130	DEIR/DEIS Phase 2	01APR02	31DEC03
120	Scoping Phase 3	01JUL03	30JUN04
150	New Starts Application Phase 2	01JAN04	30JUN04
170	FEIS/PE Phase 2	01JAN04	30JUN05
140	DEIR/DEIS Phase 3	01JUL04	31DEC06
160	New Starts Application Phase 3	01JAN07	30JUN07
180	FEIS/PE Phase 3	01JUL07	31DEC08
Design			
220	Phase 1 Bus Maint. Mods	01JUL03	30SEP04
200	Design Phase 2	01JUL05	30JUN07
210	Design Phase 3	01JAN09	30JUN11
ROW/Mitigation			
250	ROW/Mitigation Phase 2	01JAN06	30JUN07
260	ROW/Mitigation Phase 3	01JAN10	31DEC11
Procurement			
360	Rolling Stock Phase 1	01JAN03	30JUN05
340	Rolling Stock Phase 2	01JUL06	31DEC07
350	Rolling Stock Phase 3	01JAN11	31DEC13
Construction			
320	Phase 1 Bus Maint. Mods	01OCT04	31DEC05
300	Bid/Award Phase 2	01JUL07	31DEC07
400	Construction Phase 2	01JAN08	31DEC10
310	Bid/Award Phase 3	01JUL11	31DEC11
410	Construction Phase 3	01JAN12	31DEC14
Testing			
440	Testing Phase 2	01JAN08	31JAN08
450	Testing Phase 3	01JAN14	31DEC14
Service			
530	Phase 1 - Initial Bus Service	01JUL02	31DEC05
520	Phase 1 - Full Bus Service	01JAN06	31DEC16
500	Phase 2 - Initial BRT Service	01FEB08	31DEC10
505	Phase 2 - Full BRT Service	01JAN11	31DEC16
510	Phase 3 - Rail Service	01JAN15	31DEC16



Start Date	**01JAN01**
Finish Date	**31DEC16**
Data Date	**01JUL01**
Run Date	**26JUL01 09:46**

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PHASE

🟥	Phase I
🟦	Phase 2
🟩	Phase 3

URBAN RING
Proposed Project Development &
Implementation Schedule
Phases 1, 2 & 3
Implemented as Resources Become Available

EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY

Attachment 3

USGS Map Indicating Project Location and Boundaries

(Refer to Attachment 1)

Attachment 4

List of Agencies and Persons Receiving the Expanded ENF in Accordance with 301 CMR11.16(2)

CIRCULATION LIST

Boston, MA 02116-3969

Massachusetts Highway Department
Attn: Luisa Paiewonsky
10 Park Plaza, Room 3510
Boston, MA 02116

Massachusetts Highway Department
Public/Private Development Unit
10 Park Plaza, Room 4260
Boston, MA 02116

MHD - District #4
Attn: MEPA Coordinator
519 Appleton Street
Arlington, MA 02174

Kristin Engel
Office of the Attorney General
200 Portland Street
Boston, MA 02110

Anne McGahan
Central Transportation Planning Staff
10 Park Plaza
Boston, MA 02116

Vijay Mahal
Central Transportation Planning Staff
10 Park Plaza
Boston, MA 02116

William Mauro
Metropolitan Area Planning Council
60 Temple Place
Boston, MA 02111

Anne Fanton
Environmental Oversight Committee
P.O. Box 275
Boston, MA 02133

Rob Tuchmann
Hale & Dorr
60 State Street
Boston, MA 02109

Michael Lewis
Central Artery/Tunnel Project
185 Kneeland Street
Mail Stop: 03-10x-03
Boston, MA 02108

Paul Stakutis
Central Artery/Tunnel Project
185 Kneeland Street
Mail Stop: 08-5x-01
Boston, MA 02108

Nancy Lancellotti
Central Artery/Tunnel Project
185 Kneeland Street
Mail Stop: 08-5x-01
Boston, MA 02108

Massachusetts Aeronautics Commission
Attn: MEPA Coordinator
10 Park Plaza, Room 6620
Boston, MA 02116-3966

Massachusetts Historical Commission
The Massachusetts Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Metropolitan Area Planning Council
Attn: MEPA Coordinator
60 Temple Place/6th floor
Boston, MA 02111

Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 500
Boston, MA 02114

Massachusetts Natural Heritage &
Endangered Species Program
Route 135
Westborough, MA 01581

Metropolitan District Commission (MDC)
Attn: MEPA Coordinator

CIRCULATION LIST

20 Somerset Street
Boston, MA 02108

Department of Public Health
Director of Environmental Health
250 Washington Street
Boston, MA 02115

Massachusetts Water Resource Authority
Attn: MEPA Coordinator
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

Massachusetts Turnpike Authority
Attn: George Furst
Director of Environmental Affairs
668 South Avenue
Weston, MA 02493

Department of Environmental Management
Attn: Leslie Luchonok, ACEC Program
136 Damon Road
Northhampton, MA 01060

Boston City Council
1 City Hall Plaza
Boston, MA 02201

Boston Redevelopment Authority
Attn: Richard Mertens
1 City Hall Plaza
Boston, MA 02201

Boston Redevelopment Authority
Attn: Richard Garver
1 City Hall Plaza, Room 945
Boston, MA 02201

Boston Conservation Commission
1 City Hall Plaza
Boston, MA 02201

Boston Transportation Department
Attn: Vineet Gupta
1 City Hall Plaza
Boston, MA 02201

Boston Transportation Department
Attn: Ralph DeNisco
1 City Hall Plaza
Boston, MA 02201

Boston Health Department
1 City Hall Plaza
Boston, MA 02201

Boston Environment Department
Attn: Toni Pollock
1 City Hall Plaza, Room 805
Boston, MA 02201

Brookline Selectboard
11 Pierce Street
Brookline, MA 02445

Brookline Board of Health
Town Hall
333 Washington Street
Brookline, MA 02445

Brookline Planning Department
Attn: Robert Duffy, Director
Town Hall
333 Washington Street
Brookline, MA 02445

Brookline Conservation Commission
Town Hall
333 Washington Street
Brookline, MA 02445

Cambridge City Council
City Hall
795 Massachusetts Avenue
Cambridge, MA 02139

Cambridge Community
Development Department
Attn: Susanne Rasmussen
238 Broadway
Cambridge, MA 02139

CIRCULATION LIST

Cambridge Health Department
119 Windsor Street
Cambridge, MA 02139

Cambridge Conservation Commission
City Hall Annex
57 Inman Street
Cambridge, MA 02139

Chelsea City Manager
Attn: Jay Ash
City Hall
500 Broadway
Chelsea, MA 02150

Chelsea City Council
City Hall
500 Broadway
Chelsea, MA 02150

Chelsea Planning & Development
Department
Attn: John DePriest
City Hall, Room 101
500 Broadway
Chelsea, MA 02150

Chelsea Conservation Commission
City Hall
500 Broadway
Chelsea, MA 02150

Chelsea Board of Health
City Hall
500 Broadway
Chelsea, MA 02150

Everett City Council
City Hall
484 Broadway Street
Everett, MA 02149

Everett Board of Health
City Hall
484 Broadway Everett, MA 02149

Everett Conservation Commission
City Hall
484 Broadway
Everett, MA 02149

Everett Planning Department
Attn: Marzie Galazka
City Hall
484 Broadway
Everett, MA 02149

Malden City Council
City Hall
200 Pleasant Street
Malden, MA 02148

Malden Board of Health
City Hall
200 Pleasant Street
Malden, MA 02148

Malden Conservation Commission
City Hall
200 Pleasant Street
Malden, MA 02148

Malden Planning Department
City Hall
200 Pleasant Street
Malden, MA 02148

Medford City Council
City Hall
85 George P Hassett Drive
Medford, MA 02155

Medford Planning Department
City Hall
85 George P Hassett Drive
Medford, MA 02155

Medford Conservation Commission
City Hall
85 George P Hassett Drive
Medford, MA 02155

CIRCULATION LIST

Medford Board of Health
City Hall
85 George P Hassett Drive
Medford, MA 02155

Somerville Board of Alderman
93 Highland Ave.
Somerville, MA 02144

Somerville Board of Health
50 Evergreen Ave.
Somerville, MA 02144

Somerville Conservation Commission
50 Evergreen Ave.
Somerville, MA 02144

Somerville Office of Planning &
Community Development
Attn: Jeff Levine
93 Highland Ave.
Somerville, MA 02143

Fred Pinches
106 Thorndike Street
Brookline, MA 02446

Steve Kaiser
191 Hamilton Street
Cambridge, MA 02139

Dan Wilson
NEWAC
12 Marshall Street
Boston, MA 02201

Bob O'Brien
81 E. India Row
Boston, MA 02110

Dick Easler
City of Cambridge
57 Inman Street
Cambridge, Ma 02137

Franklyn P. Salimbene
51 Eliot Street
Jamaica Plain, MA 02130

Paul Regan
MBTA Advisory Board
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Attachment 5.1

Local and Federal Permits and Approvals Required

Matrix of Historic Districts Potentially Impacted

Local and Federal Permits and Approvals Required and Inventory of Historic Districts Potentially Impacted

5.1.1 Local and Federal Permits and Approvals Anticipated to be Required

As an entity of the Commonwealth of Massachusetts, the Massachusetts Bay Transportation Authority (Authority) is generally exempt from the requirements of municipal permitting programs. However, the Authority has held extensive public meetings in each Urban Ring community to discuss local issues and concerns, and has taken these issues and concerns into consideration in the process of identifying the location and characteristics of project alternatives. The Authority will continue with this program of public meetings to continue to solicit local comment and support as the project development process moves forward.

The federal permits and approvals anticipated to be required for the Urban Ring project are presented in Table 5.1.1.

Table 5.1.1

FEDERAL PERMITS ANTICIPATED TO BE REQUIRED FOR THE URBAN RING PROJECT

Permit/Regulation	Administering Authority
Permit, Section 10, River and Harbors Act of 1899	U.S. Army Corps of Engineers
Water Quality certification, Section 401, Federal Clean Water Act	Massachusetts Department of Environmental Protection
Permit, Section 404, Federal Clean Water Act	U.S. Army Corps of Engineers
National Pollution Discharge Elimination System General Permit, Section 402, Federal Clean Water Act	U.S. Environmental Protection Agency, Massachusetts Department of Environmental Protection
Record of Decision, National Environmental Policy Act	Federal Transit Administration
Determination of No Adverse Effect to Historic or Archaeological Resources, Section 106 of the National Historic Preservation Act	Commonwealth of Massachusetts Historic Preservation Officer
Determination of No Adverse Effect to Public Parklands, Section 4(f)of the Surface Transportation Act of 1966	National Park Service

5.1.2 Historic Districts Potentially Impacted

Historic districts where Phases 2 and 3 of the Urban Ring project will pass are listed in Table 5.1.2. The Phase 1 Transportation Systems Management will not impact historic resources since no new construction will take place, and new or modified bus routes will be located within areas currently experiencing urban traffic.

Table 5.1.2

Potential Impacts of Phases and Alternatives to Historic Areas

Phase / Alternative	City	Transportation Method	Historic District	Impact
Phase 2	Chelsea/Everett/Medford	Bus – Existing Roadway, Busway	None	N/A
	Somerville	Bus – Existing Roadway, Busway	None	N/A
	Cambridge	Bus – Existing Roadway, Busway	Cottage Farm H.D.	Medium
		Bus – Existing Roadway, Busway	East Cambridge H.D.	Medium
		Bus – Existing Roadway, Busway	Hastings Square H.D.	Medium
		Bus – Existing Roadway, Busway	Charles River Basin H.D.	High
	Brookline	Bus – Existing Roadway, Busway	Cottage Farm H.D.	Medium
		Bus – Existing Roadway, Busway	Beacon Street H.D.	Medium
		Bus – Existing Roadway, Busway	Longwood H.D.	Medium
	Boston	Bus – Existing Roadway, Busway	Olmstead Park System	Medium
		Bus – Existing Roadway, Busway	Fenway/Kenmore Neigh.	Medium
		Bus – Existing Roadway, Busway	Parker/Mission Hill Neigh.	Medium
		Bus – Existing Roadway, Busway	Lower Roxbury Indust. Area	Medium
		Bus – Existing Roadway, Busway	Charles River Basin H.D.	High
Phase 3, Alternative A1 - Kenmore Alignment (LRT)	Chelsea/Everett/Medford	(See Phase 2)	None	N/A
	Somerville	LRT – At Grade and Tunnel	Mt. Vernon H.D.	High
	Cambridge	LRT – Tunnel	Hastings Square H.D.	High
		LRT – Tunnel	Lechmere Point H.D.	High
		LRT – Tunnel	Winter Street H.D.	High
		LRT – Tunnel	East Cambridge H.D.	High
		LRT – Tunnel	Charles River Basin H.D.	High
	Brookline	LRT – Tunnel	Cottage Farm H.D.	High
		LRT – Tunnel	Beacon Street H.D.	High
		LRT – Tunnel	Longwood H.D.	High
	Boston	LRT – Tunnel	Back Bay Rd./Back Bay West	High
		LRT – Tunnel	Olmstead Park System	High
		LRT – Tunnel	Fenway/Kenmore Neigh.	High
		LRT – Tunnel	Parker/Mission Hill Neigh.	High
		LRT – Tunnel	Lower Roxbury H.D.	High
		LRT – Tunnel	Frederick Douglas H.D.	High
		LRT – Tunnel	Lower Roxbury Indust. Area	High
		LRT – Tunnel	St. Margaret/Boston St. H.D.	High
		LRT – Tunnel	Crescent Ave. H.D.	High
		LRT – Tunnel	Dudley Station H.D.	High
		LRT – Tunnel	Roxbury Highlands H.D.	High
		LRT – Tunnel	Mt. Pleasant H.D.	High
		LRT – Tunnel	Dudley Triangle H.D.	High
		LRT – Tunnel	Humphrey's/East Cottage St. H.D.	High
		LRT – Tunnel	Pleasant St. North H.D.	High

(Table 5.1.2 continued)

Phase / Alternative	City	Transportation Method	Historic District	Impact
Phase 3, Alternative A2 - Kenmore Alignment (Heavy Rail)	Chelsea/Everett/Medford	BRT (See Phase 2) and RT – At Grade	None	N/A
	Somerville	RT – At Grade and Tunnel	Mt. Vernon H.D.	High
	Cambridge	RT – Tunnel	Hastings Square H.D.	High
		RT – Tunnel	Cottage Farm H.D.	High
		RT – Tunnel	East Cambridge H.D.	High
		RT – Tunnel	East Cambridge H.D.	High
		RT – Tunnel	Charles River Basin H.D.	High
	Brookline	RT – Tunnel	Cottage Farm H.D.	High
		RT – Tunnel	Beacon Street H.D.	High
		RT – Tunnel	Longwood H.D.	High
	Boston	RT – Tunnel	Back Bay Rd./Back Bay West	High
		RT – Tunnel	Olmstead Park System	High
		RT – Tunnel	Fenway/Kenmore Neigh.	High
		RT – Tunnel	Parker/Mission Hill Neigh.	High
		RT – Tunnel	Lower Roxbury H.D.	High
		RT – Tunnel	Frederick Douglas H.D.	High
		RT – Tunnel	Lower Roxbury Indust. Area	High
		RT – Tunnel	St. Margaret/Boston St. H.D.	High
		RT – Tunnel	Crescent Ave. H.D.	High
		RT – Tunnel	Dudley Station H.D.	High
		RT – Tunnel	Roxbury Highlands H.D.	High
Phase 3, Alternative B – B.U./Park Drive Alignment (LRT)	Chelsea/Everett/Medford	(See Phase 2)	None	N/A
	Somerville	LRT – At Grade and Tunnel	Mt. Vernon H.D.	High
	Cambridge	LRT – At Grade and Tunnel	Hastings Square H.D.	High
	Brookline	LRT – Tunnel	Cottage Farm H.D.	High
		LRT – Tunnel	Beacon Street H.D.	High
		LRT – Tunnel	Longwood H.D.	High
	Boston	LRT – Tunnel	Olmstead Park System	High
		LRT – Tunnel	Fenway/Kenmore Neigh.	High
		LRT – Tunnel	Parker/Mission Hill Neigh.	High
		LRT – Tunnel	Lower Roxbury H.D.	High
		LRT – Tunnel	Frederick Douglas H.D.	High
		LRT – Tunnel	Lower Roxbury Indust. Area	High
		LRT – Tunnel	St. Margaret/Boston St. H.D.	High
		LRT – Tunnel	Crescent Ave. H.D.	High

Attachment 5.2

Plans and Policies Consistency Matrix

Attachment 5.2

Plans and Policies Consistency Matrix

BOSTON	**CONSISTENCY**
Boston Municipal Harbor Plan	√
Boston 400	√
Institutional Master Plans (BU, NE)	√
South End Master Plan	√
Mass Turnpike Air Rights Plan	√
Roxbury Strategic Master Plan	√
East Boston Master Plan	√
Fenway Master Plan	√
Main Street Program	√
Transit Oriented Development Study	√
Dudley Square Transportation & Air Quality Study	√
South Boston Waterfront Master Plan	√
Access Boston 2000-2010 Citywide Transportation Plan	√
South Boston Transportation Study	√
The Seaport Public Realm Plan	√
CHELSEA	
Everett Ave. Urban Renewal Area	√
Highest & Best Use Analysis & Development Strategy for Study Area 1 & 2, Everett Ave, North	√
Memorandum of Understanding & Mini-Plan	√
EVERETT	
Telecom City	√
SOMERVILLE	
Boynton Yards Revitalization Project	√
Assembly Square Revitalization Plan	√
Union Square Master Plan	√
CAMBRIDGE	
Institutional Master Plan (MIT)	√
Kendall Square Urban Renewal Project	√
Eastern Cambridge Planning Study	√
Cambridgeport Revitalization Plan	√
East Cambridge Riverfront Plan	√
Growth Policy Document: Toward a Sustainable Future	√
Cambridge Economic Development Policy Document	√
BROOKLINE	
Comprehensive Plan	√
Brookline Plan 2000-2010	√

Attachment 5.2

Plans and Policies Consistency Matrix

METROPOLITAN DISTRICT COMMISSION	**CONSISTENCY**
New Charles River Basin Master Plan	
"Back to the Beaches" Master Plan	√
MASSPORT	
East Boston Strategic Plan	√
South Boston Strategic Plan	√
Logan Modernization Project	√
MBTA	
Silverline / South Boston Piers Transitway	√
Program for Mass Transit	√
Service Delivery Policy	√
Passenger Bill of Rights	√
MHD	
Massachusetts Pedestrian Transportation Plan	√
Mass Statewide Bicycle Transportation Plan	√
BOSTON MPO / CTPS	
FY 2001-2006 TIP	√
Transportation Plan 2000	√
MAPC	
Metro Plan 2000-2025	√

EOEA	**CONSISTENCY**
Executive Order 385 / Planning for Growth	√
Community Preservation Initiative	√
Air, Solid Waste / Recycling, Brownfields, Environmental Justice	√
DEP	
State Implementation Plan (SIP)	√
Resource Protection	√
Waste Prevention	√
Waste Site Clean Up	√
CA/T Vent Certification Order	√
EOTC	
EOTC/DEP Admin. Consent Order	√
DED	
Choosing to Compete: A Statewide Strategy for Job Creation & Economic Development	√
DHCD	
Executive Order 418	√
Urban Renewal	√

Attachment 5.2

Plans and Policies Consistency Matrix

FEDERAL	**CONSISTENCY**
DOT / FTA	
TEA-21 / New Starts	√
Bus Rapid Transit	√
Livable Communities	√
Strategic Plan 1998-2002	√
EPA	
Air, Brownfields, Smart Growth, Alternative Fuels, Clean Air Act	√
Urban Environmental Initiative	√
HUD	
Brownfields, Economic Development, Housing, Community Planning & Development	√
DOE	
Alternative Fuel Vehicles	√